

# Walk Around

By Larry Davis
Color by Don Greer

P-51D Mustang





# Introduction

This book will take the reader on a pilots tour of the P-51D Mustang. Actually we will go far beyond what the pilot got to see as many of the photos were taken while North American was actually building P-51Ds during the Second World War. The main focus of our "Walk-Around" is the restored P-51D, which can be seen at the U. S. Air Force Museum in Dayton, Ohio, This aircraft was the last flying Mustang in service with the U.S. Air Force, being delivered to the Air Force Museum from the West Virginia Air National Guard in January of 1957. As such, it does not totally represent a Second World War P-51D, having many minor changes and updates, notably a cuffless propeller and several instrument changes. Additionally, all the radio receivers and equipment have been removed from an otherwise beautiful and painstaking restoration. It is marked as Colonel Chet Sluder's P-51D SHIMMY IV, the uircraft Colonel Sluder flew when he was assigned to the 325th Fighter Group during the Second World War. Between the many factory photos, the combat photos, and those of the restored SHIMMY IV, the reader will be able to "walk around, through, and over" a typical P-51D Mustang -- "the most aerodynamically perfect pursuit plane in existance!"

## Acknowledgements

Gene Boswell, NAA Public Relations **Bob Esposito** US Air Force Museum A.C. Chardella/359th Fighter Group Assn. Jim Lansdale Jeffery Ethell Don Garrett Jr. David McLaren Tom Ivie Dick Martin Merle Olmsted David Menard Ernie McDowell Jim Sullivan John Stanaway Keith Melville

Larry Sutherland

Rockwell Internation/North American Aircraft Division United States Army Air Force Nick Williams

## **Dedication:**

This book is dedicated to the people of the restoration facility at the United States Air Force Museum, who spend endless hours removing and replacing rusty screws, polishing weather-beaten metal, and researching accurate markings, in an effort to give the public an aircraft worthy of representing history as accurately as possible. Thanks go to all you guys, especially Dave, Tom, Chuck, and Wes.

A new production P-51D straight off the North American inglewood assembly line during May of 1944. The very clean lines of the basic design are clearly evident. The instrument test boom on the wing leading edge was not found on production aircraft. (NAA)



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#### ISBN 0-89747-360-4

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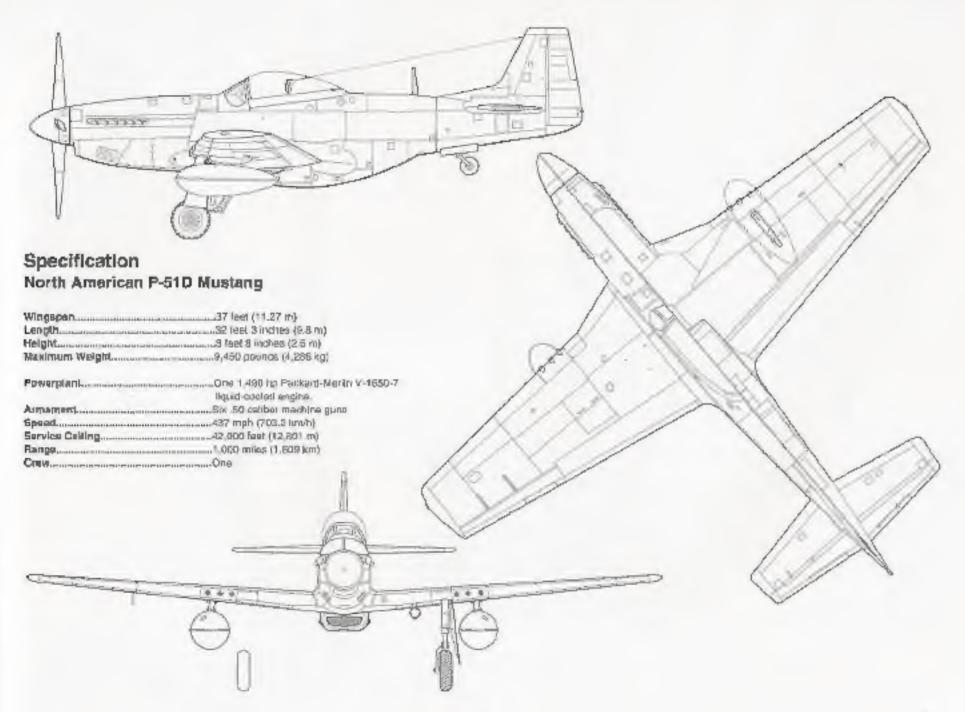
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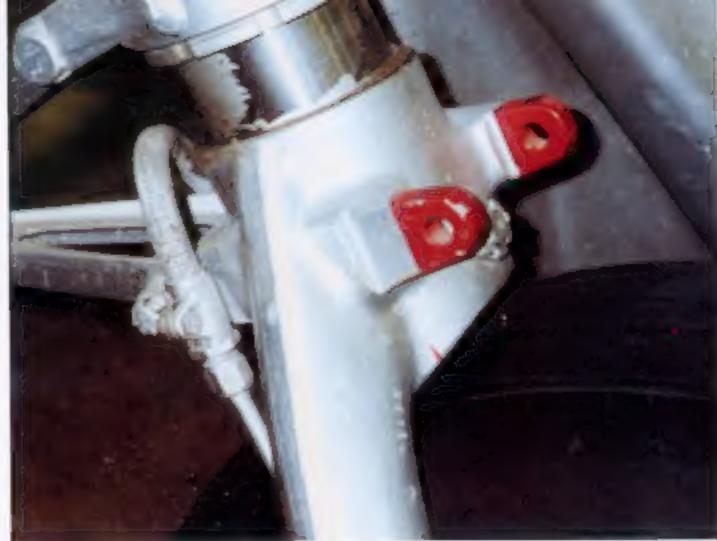
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(Overleaf) A P-51D of the 383rd Fighter Squadron at Honington, has its engine fine-tuned during the Fall of 1944. Crews often worked under rather primitive conditions to service engines and accessories. (via Jeff Ethell)





The inside of the port main landing gear and wheel/tire assembly. The Red eyelet connections in the center of the wheel hub and on the landing gear strut are attachment points for tow bars. The eyelets were unpainted on Second World War production aircraft.



The two Red eyelets are the main landing gear strut tow bar attachment points. Above them is the main landing gear oleo piston, which is in the compressed position.

The outside of the main wheel and tire assembly, showing the finned wheel. The main wheels were twenty-seven inches in diameter and used tires with many different tread patterns, which came from a variety of manufacturers.



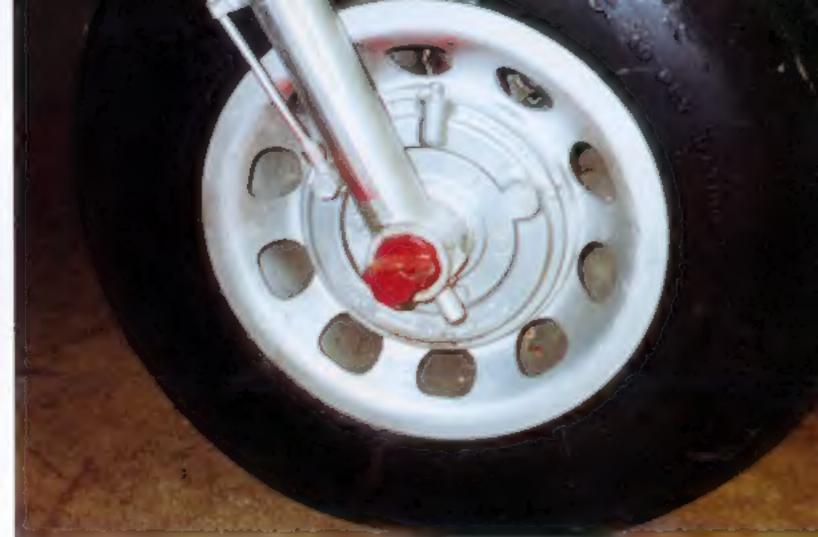




The main landing gear bay outer doors were attached to the landing gear strut just above the oleo piston. The doors were made of two pieces of stamped aluminum that were riveted together.

The top of the main landing gear scissors assembly. The flexible braided steel brake line passes through the center of the scissors assembly.





The inside of the main wheel/tire assembly and disc brake assembly. The brake line is on the back side of the strut and the Red eyelet is one of the towing eyes. The disc brake assemblies were made by Bendix Corporation.

Rear inside of the port landing gear strut assembly showing the braided steel brake line passing through the scissors assembly and outer landing gear bay door assembly attachment to access.





A North American Aviation assemblyman inspects the radiator Intake on the Inglewood assembly line. Also visible is the inner main landing gear bay door assembly and actuators. The factory applied Silver paint to the underside of the wing. (NAA)



A P-51D of the 43rd Fighter Squadron showing the right main landing gear inner door. The doors were either left in Natural Metal finish, or painted Silver by the factory.

At this point in the production line, the almost completed fuselage is joined to the wing assembly, almost exactly the same way the model kits are assembled. The radiator intake and the engine access panels have yet to be installed. (NAA)





The complete inner starboard main landing gear assembly, which is identical in all respects to the port landing gear assembly. The landing gear struts were usually painted Silver at the factory to retard corrosion.



Inner rear of the starboard main landing gear assembly. The braided steel brake line attachment points are located on the brake hub and the brake line passes through the scissors assembly.



The inside of the starboard main wheel/tire assembly showing the tow bar attachment eye. This tire has a circumferential tread pattern.



The small roller on the bottom of the landing light dome was made of wood.

(Right & Left) The P-51 had a single landing light, which was located inside the rear portion of the port main landing gear bay. The light rotated down and forward as the landing gear was extended. When retracting or extending, the landing gear hit the roller, moving the light into its proper position.









The self-sealing fuel tanks were mounted into the wings from the underside. The ninety-two gallon wing tanks were manufactured specifically for the P-51D/K by U.S. Rubber Company in Los Angeles, California. (NAA)



The interior of the main landing gear bay showing the electrical and hydraulic lines that run near the main landing gear pivot box

Just behind the landing light in the rear wheel cavity are the hydraulic lines, identified by their Yellow painted rings, and a single fuel line, identified by the Red band.





The main lending gear bay showing the hydraulic lines that operate the main lending gear strut rotation mechanism.

The electrical wiring for the Type G9 gun chargers, wingtip lights, and the electric motors that operate the flaps are located in the wheel well above the landing light.





The forward wall of the landing gear well showing the hydraulic lines and a pair of mechanical bett crank wires for the main strut door timing valve. The rear of the landing light is also visible.

The rear of the right landing gear well reveals several hydraulic lines (Yellow bands), and a single larger fuel line. The spring is attached to the inner door latch.





When the main landing gear inner door is closed, this is what is visible (if you look hard). The landing gear uplock assemblies, various belt crank assemblies, pipes, and electric wire bundles. With the engine running, hydraulic pressure closes the main wheel bay doors. They "bleed down" on the ground with the power off

The forward part of the starboard main landing gear bay reveal a mechanical actuator, cables and landing gear up lock.







A F-6D Mustang on the Inglewood assembly line shows the Interior of the wing flap area, before the flaps are installed. The pilot's seat is resting on the wing, and the painted reinforcement panel is visible on the inside of the main gear bay doors. (NAA)

The North American Dallas, Texas assembly line has both P-51K Mustangs and T-6F Texans under final assembly. The T-6s are bound for Russia under the Lend Lease and have already been painted with the Soviet Red star marking on the fuselage. The upper wing of the Mustang in the foreground clearly shows the Chromate Yellow primer applied to the wing surface, which was then painted Gloss Silver. The flaps are in Natural Metal. (NAA)



(Above) The completed wing assembly, minus the flaps, is placed on a hoist and primered with Chromate Yellow paint. During this stage of construction, the landing gear is operationally drop tested prior to attaching the wings to the fuselage. (NAA)

This area was near the end of the Inglewood, California NAA plant easembly line. At this stage, the wings have been attached to the fuse-lage. The Black outline U. S. insignia on the Chromate Yellow primered wing shows the painters the correct placement for the final full color national insignia. (NAA)



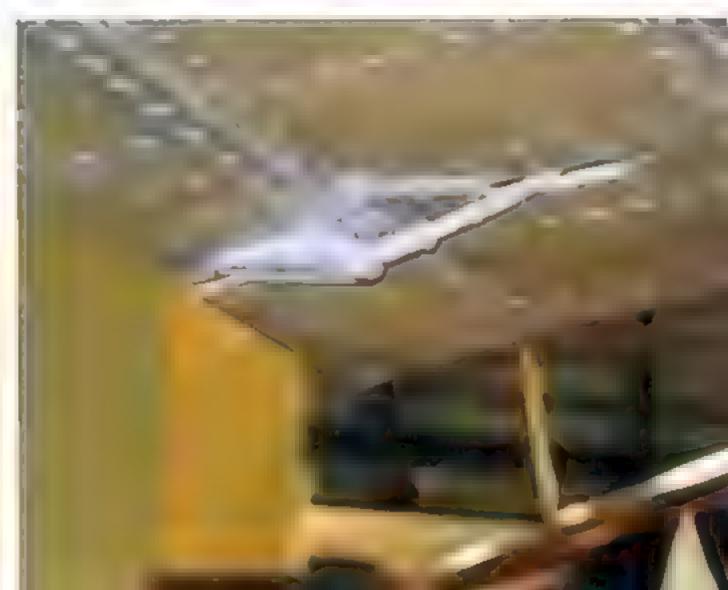


This post-War (1947) P-51D shows several interesting things including the addition of the MN-26C Direction Finder loop antenna on the fuselage spine behind the standard antenna mast. This was usually only added to aircraft flying in the China-Burma-India Theater during the war. The flaps are at 'full down' position, 47 degrees. (William J. Balogh Jr.)

The wing flap/alteron joint, showing the alteron actuator rod that is usually hidden from external view. The atteron is actually hotlow.



The underside of the starboard alleron showing the actuator rod assembly for the alleron trim tab. The alleron is made from flush rivoted Alciad metal.





The port flap has this painted indicator which offers the pilot a quick reference as to how much flap he has positioned. The indicator is only installed on the port flap.

This is the trailing edge of the wing/fuselage joint showing the area that the flap closes into, plus the flap actuator rod for the starboard flap.





The starboard flap does not have a reference indicator painted on the upper surface. It does, however, have this unidentified slot, which is repeated on the port flap.

The underside of the port flap closure area showing the actuator rod and connecting plate. Most of the time this area was unpainted, although it could be painted Chromate Green primer, or even Silver.





The flaps on LITTLE QUE are fully down at 47 degrees as seen on the Black and White flap indicator panel. LITTLE QUE was a P-51D-20 assigned to the 458th Fighter Squadron at North Field on two Jima during the Summer of 1945. (Ron Witt)



This post-War F-51D, assigned to the 85th Fighter Interceptor Squadron, shows the fully extended flaps. The flap indicator band on this Mustang has been either removed or painted over in Silver. The wings have an anti-skid walkway band added to the wing root area. (Dave Ostroski)

The crew chief and armorer sit on the wing of SWEET MARY LYNN, a F-51D assigned to the 314th Fighter Group. There is a Red stripe painted on the inside portion of the flap indicating a NO STEP area. (Kelth Melville)



A pair of North American Aviation armament technicians are installing three of the Browning M2 50 caliber machine guns in the port wing of this Mustang at the Inglewood, California assembly plant. The flaps have been disconnected and allowed to drop to 90 degrees for ease in installing the guns. The movable rack behind them has nine 50 caliber machine guns, and room for three more. (NAA)

(Below) Two of the three Browning M2 50 caliber machine guns have been installed in the left wing gun bay. Several things are visible including the gun chargers, installed on opposite sides of the guns, ammunition storage bays, ammunition feed chutes, and belted 50 caliber ammunition. (NAA)

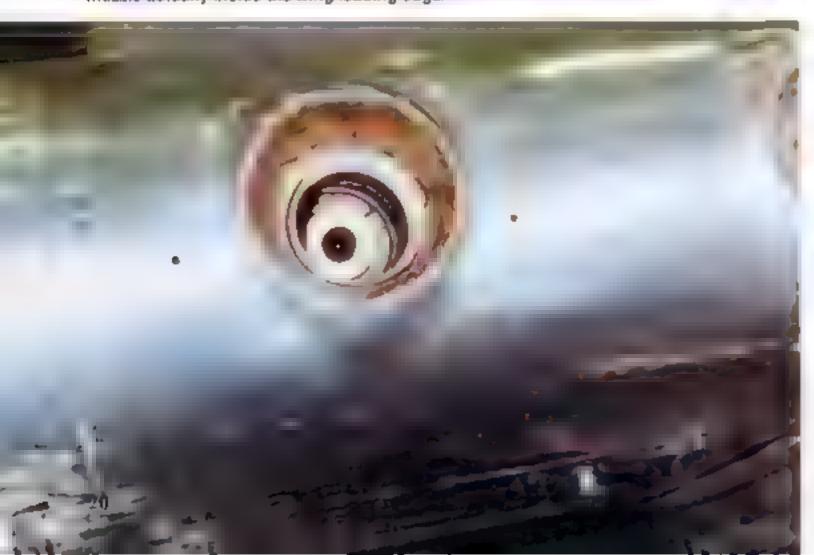


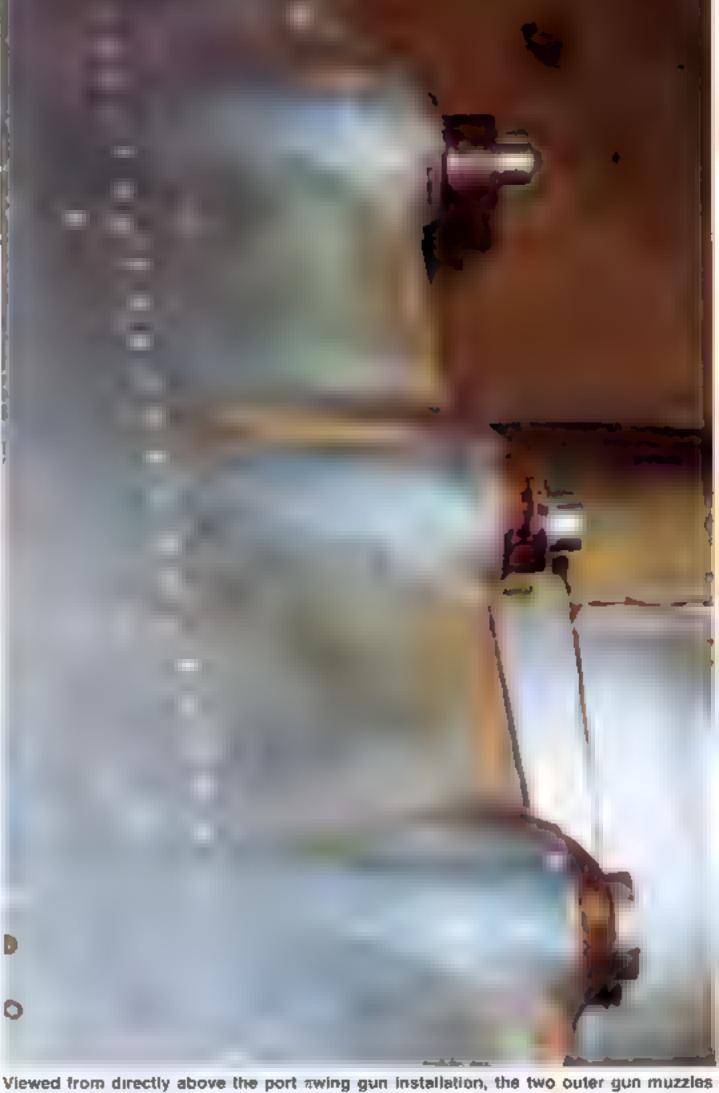




The three gun blast muzzles for the port set of 50 caliber machine guns. Only two of the three muzzles actually protrude through the wing leading edge due to the staggered gun installation.

The inner M2 50 caliber gun is installed in the gun bay several inches further back from the wing leading edge than the outer pair of 50 caliber guns. This puts the inner gun muzzle actually inside the wing leading edge.





Viewed from directly above the port awing gun installation, the two outer gun muzzles are inline, while the inner opening is simply an open blast tube.



The port wing gun bay with all three 50 caliber M2 machine guns installed. The inner .50 caliber gun is installed further back in the gun bay so that the ammunition feed will line up properly with the gun breech.

The outer two 50 caliber guns and Type G9 electric gun chargers on the starboard, or inner side of the gun breech. There are safety cable installed, through the rear of each gun.

The port innermost 50 caliber gun showing the Type G9 electric gun charger mounted on the left, or outer side of the gun breech. This was done because of the close proximity of the inner gun to the gun bay wall.





Staff Sergeant John Stiles cleans the 50 caliber M2 machine guns of an Indiana Air National Guard F-51D on the ramp at Gowen Field, Idaho. The Indiana ANG was at Gowen Field for an Air Guard gunnery competition. This Mustang has a fixed tail wheel, without doors, that was installed on USAF and ANG F-51Ds during the early 1950s. (USAF)

These armorers are loading 50 caliber ammunition into the starboard front ammunition bay of an F-51D assigned to No. 2 Squadron, South African Air Force during the Korean War. The gun bay Interior was painted Chromate Yellow at the factory. (USAF)





A pair of Indiana ANG armorers load 50 caliber ammunition into the forward ammunition bay of a F-51D. The forward ammunition bay was deeper than the rear bay, and supplied 270 rounds of ammunition for each of the outer machina guns. (David McLaren)





The portable gun testing equipment on the ramp of the North American Aviation plant in Dallas, with a new P-51K positioned in the mount. Each P-51D/K or F-6D/K was mounted in the gun test device by bars attached to the tow hook eyes. The guns were fired directly into the large open chutes. Both the empty brass casings and the bullets were then collected in large containers under the wings and then re-cycled. {NAA}

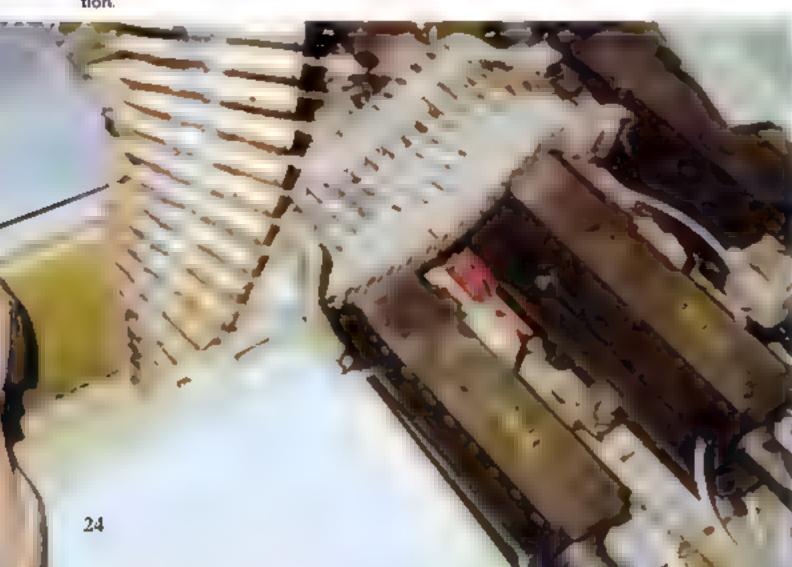
Originally designed to be portable, the Gun Test Firing Device was finally made completely stationary. Using this machine, it was quite easy to salvage both the brass casings and bullets. Salvaging the bullets from a sand pit was both time consuming and expensive. (NAA)





The ammunition feeds in the port wing gun bay. Each ammunition feed was angled over the other guns. The middle gun ammunition feed came from the upper tray of the forward ammunition bay.

The inner 50 caliber gun feed with its minor 'crank' to mate the ammunition feed up with the gun breech. The inner gun ammunition bay held 400 rounds of .50 caliber ammunition.





The inner gun ammunition feed was still angled slightly forward in spile of having the gun positioned further back in the gun bay itself

The port wing ammunition bay showing the ammunition belt rotlers. The outer pair of .50 caliber guns had only 270 rounds of ammunition per gun. The interior of this gun bay is painted Chromate Green, however, Chromate Yellow was the delivery color





An armorer feeds 50 caliber cartridge belts into the starboard wing ammunition bay of a 12th FBS F-510 in Korea during 1951. The aircraft suffers from extreme weathering and oil staining, which was typical of all Korean War Mustangs. (Frank Harvan)

The upper gun bay door latch mechanism. The door itself is hinged at the forward edge, and each door has two pop-up latches holding it in place. Only this door is hinged.





The Inside of each .50 caliber gun bay door had all the instructions for bore-sighting, as well as directions for the proper ammunition loading. This door has had Chromate Green applied over the original Chromate Yellow.

The lower gun bay door had no latches, locks, or hinges. It was held in place by the lower tabs, which hooked under the edge of the wing, then locked in place by the upper gun bay door.





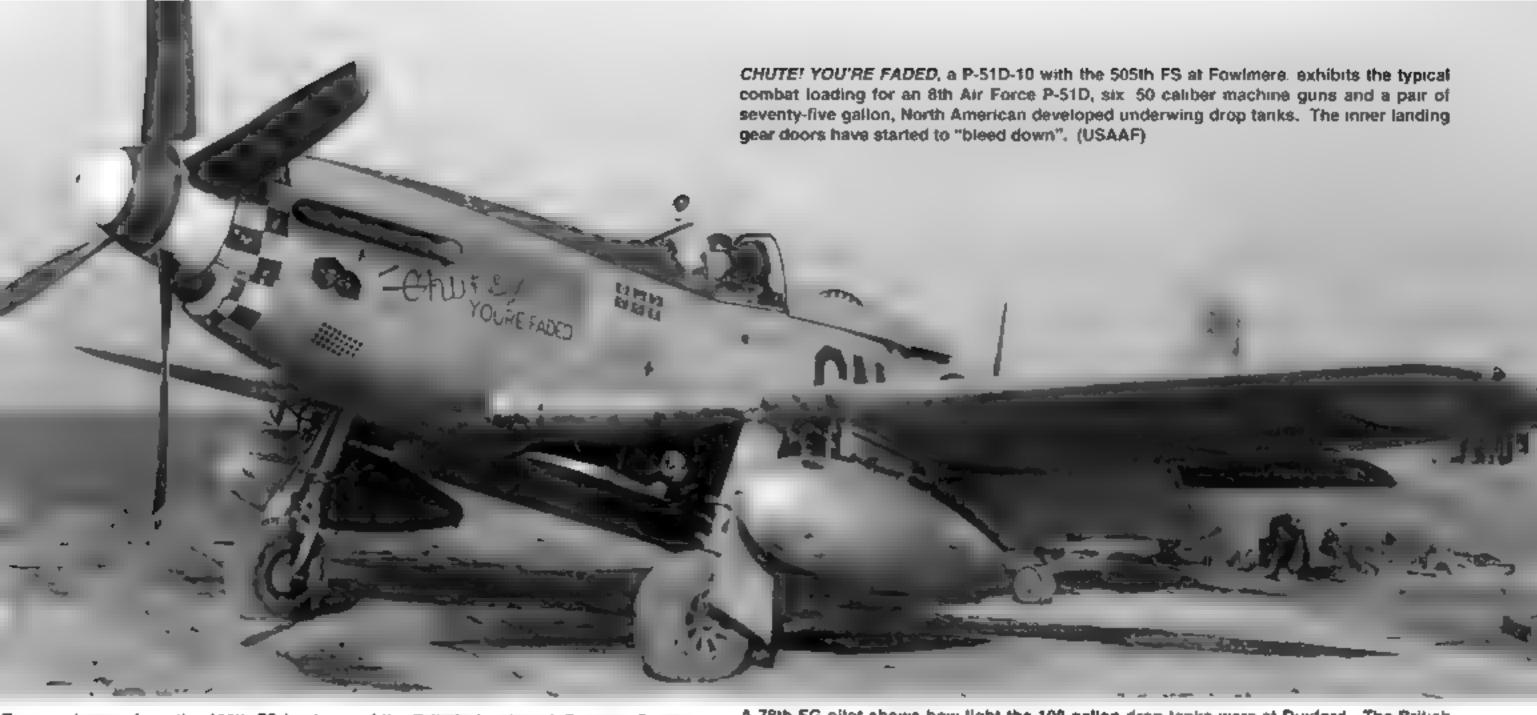
Armorers load .50 caliber machine gun belts into the ammo feeds of a 45th Fighter Squadron P-51D at South Field on two Jima during 1945. Examination of the rounds in the belts show that every fifth and sixth rounds were tracer ammunition. The underwing tank is the later style 110 gallon tank with external bracing. (USAAF)



Two 41st FS armorers set up the bore-sighting equipment 1,000 inches in front of this P-51D at Clark Field in June of 1945. Mustang guns were boresighted to converge at 300 yards, as were the gun camera and sight. (USAAF)

This is the conventional test firing sand pit at the inglewood assembly plant near Los Angeles. All P-51s had their guns tested and sighted-in before acceptance by the Army Using a sand pit such as this, meant that the slugs could be recycled. (NAA)





Two mechanics from the 436th FS load one of the British-developed, Bowater Company 110 gallon, pressed paper drop tanks on *AMBROSIA*, the P-510 flown by Lieutenant H.P. Plunk. (John Preston)

A 78th FG pilot shows how light the 108 gallon drop tanks were at Duxford. The British developed the pressed paper tank to save weight, cost, and metal, all of which were in short supply in wartime England. (Frank Olier)







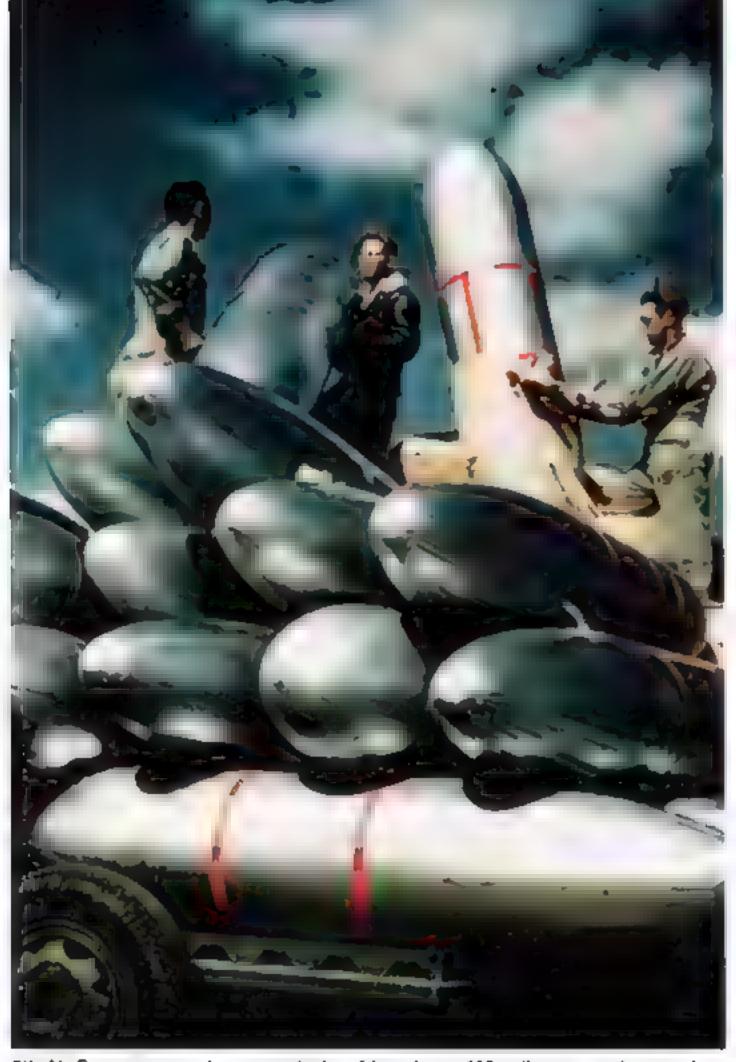


The underwing pylon and ordnance stabilizers developed for the P-51D/K Mustang, which were different in design from earlier models of the Mustang, a though they were interchangeable. The pylon for the P-51D could hold 1,000 pounds of various ordnance and was plumbed for fuel tanks

The empty shell casing ejection chutes located on the underside of the port wing (L) and the starboard wing (R) just behind the underwing pylon. The empty brass casings simply fell through these holes, scattering brass all over the countryside.







Bth Air Force personnel unwrap stacks of brand new 108 gallon pressed paper drop tanks during 1944. Thousands of these and other metal drop tanks, both Allied and German, were dropped on Europe. The tanks were jettisoned as soon as an enemy aircraft was sighted. (via Jeff Ethell)



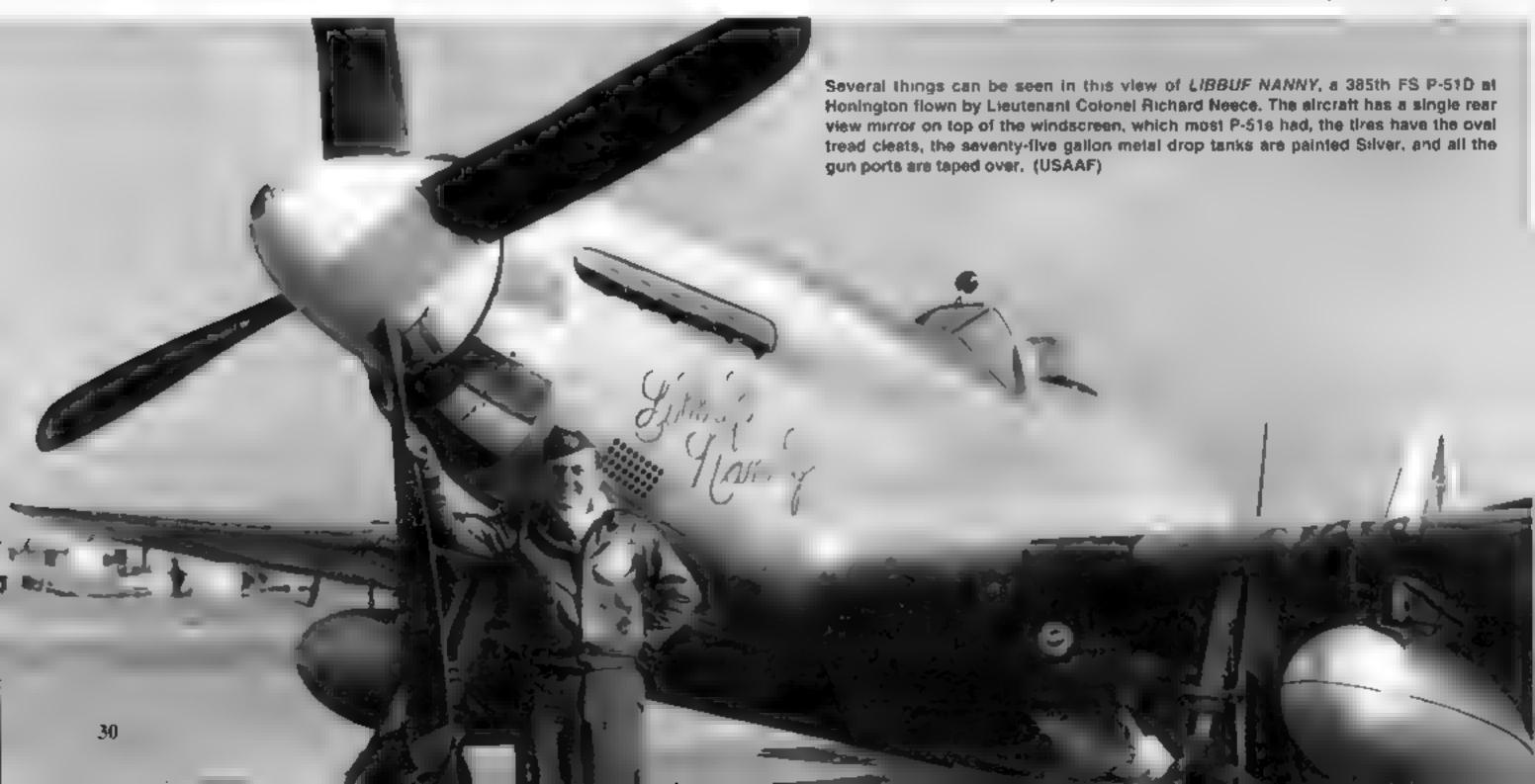
Two 4th FG ground crew members guide a 108 gallon pressed paper drop tank under the wing of a P-51D at Debden in July of 1944. There is a plate covering the carburetor air filter, and the Red nose band is very weathered, indicating many hours at high speeds. (USAAF)



A new P-51D taxes to the checkout area at Mines Field, now Los Angeles International Airport, carrying a pair of the new 110 gallon metal drop tanks, which were an enlarged development of the original seventy-five gallon metal drop tanks. (NAA)



Seventy-live gallon metal drop tanks on Major Niven Cranfill's *DEVILESS 3RD*, a 368th FS P-51D at East Wretham, England. The later pressurized seventy-five gallon drop tanks had a flush-mounted filler cap that offered a smoother air flow. (A.C. Chardella)





These P-51Os from the 46th FS each carry a pair of the 110 gation metal drop tanks developed for the Mustang. The 110 gation tanks had external sway brace plates in addition to the standard pylon sway braces. (USAAF)

The early North American Aviation unpressurized seventy-five gallon metal drop tanks had fuel filler pipes and caps that extended from the tank. Obviously a few dents didn't hurt the tank or its aerodynamics. (Keith Melville)



Several Pacific Theater Mustang groups adopted the Lockheed-designed 165 gallon drop tanks originally intended for use on the P-38 Lightning. These very large metal drop tanks also needed external sway brace plates on both sides of the underwing pylons when used on a P-51. (Ron Witt)





Major Pierce McKennon taxles to the active runway at Debden carrying a pair of the 108 gallon pressed paper drop tanks. English-based AAF Mustang and Thunderbolt groups made extensive use of the British-developed paper drop tanks. (USAAF)

The 110 gallon pressed paper drop tanks were built by the Bowster Company in England. It was basically a wire reinforced, paper mache tank, painted with Silver or Gray airplane dope, similar to that used on airplane fabric control surfaces. Io retard fuel leakage

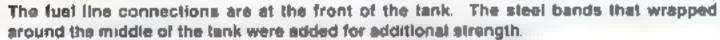
The pressed paper drop tanks had flat, reinforced Indentations at any place where a fuel cap or pipe connection was called for







Left front of the wing pylon, sway brace and P-S10 tank adapter on a 108 gallon pressed paper drop tank. The fuel lines are not connected.

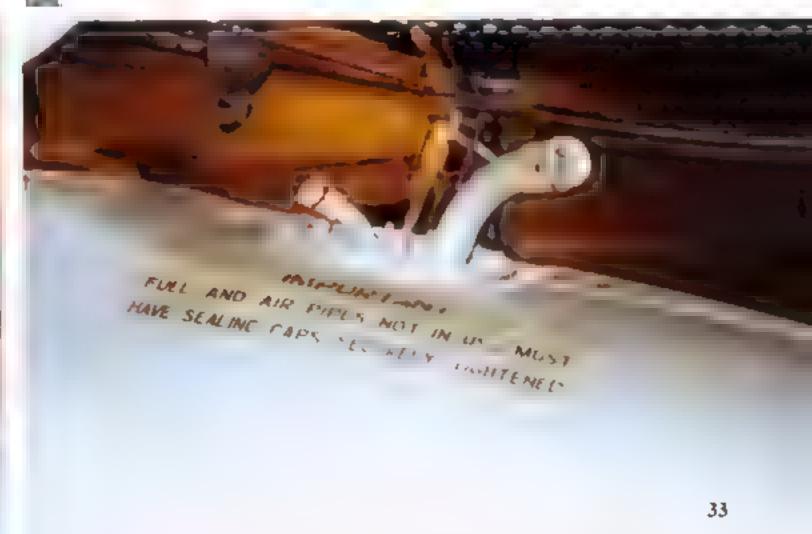






Right side of the pylon showing the sway braces and adjustment acrews that kept the tank from rocking in flight, which could tear it from its mounts. The fuel pipe is extending from the pylon.

The fuel and air pipes located on the rear of the 108 gallon pressed paper tank, plus all the stencil instruction decais. None of the fuel lines have been connected on this drop face.

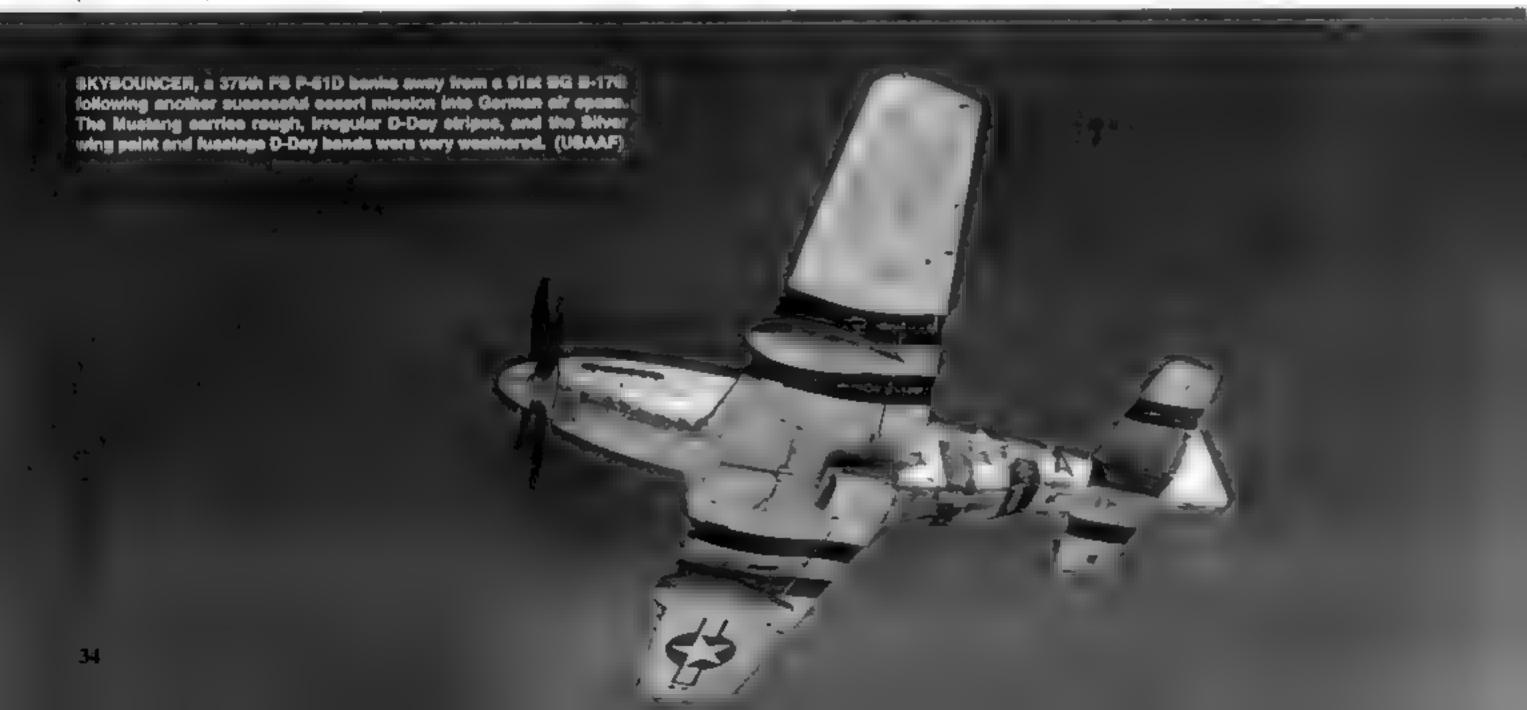




During the Korean War, Mustangs flew fighter-bomber mission with bombs and rockets. When standard seventy-five gallon drop tanks were not available, the Mustang groups adopted modified F-80 Misawa drop tanks, which could be used on the standard pylons. (via Jim Sullivan)



Standard Lockheed-designed F-80 drop tanks were used on this F-S1D from the 124th FBS/lows Air National Guard. The cuffs have been removed from the Hamilton Standard propeller. (via Dick Phillips)







The (from top) Red, Green and Yellow formation lights were located under the right wing. All Army Air Force fighter aircraft had a similar set of lights that were used to signal troops or people on the ground.



A small Red teardrop shaped navigational light for night flying was located on port winglip.

The starboard wingtop had a small Blue, sometimes Green, navigational light. The light on this Mustang has been modified with a small cover over the rear of the light.





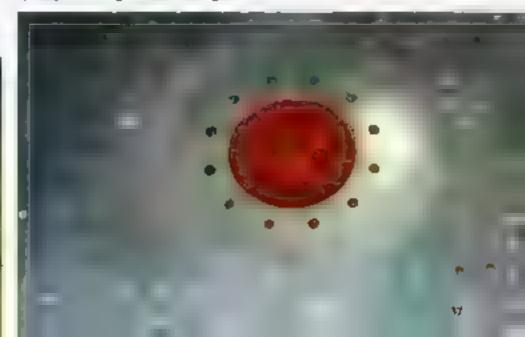
The upper starboard wing showing how right the gun and ammunition boy doors lit when everything was tocked in piece. Only the toward main gun they door was hinged end-had locke.

Located on the underside of the starboard or right wing, was the plightube, which measured the students of the Nuriang. The top speed for the P-510 was approximately 430 mps.



On the extreme outer wing panels, near the alterons, was a small reused bump, commonly called an air flow lance, which amouthed and guided the air flow over the wing toward the flight controls.

On the upper side of both wings were the Red colored wing fuel tank filler caps. These caps Itt liveh with the wing parels when correctly closes. Each sing feet tank held nine-ty-two gallions of high octons aviation gas





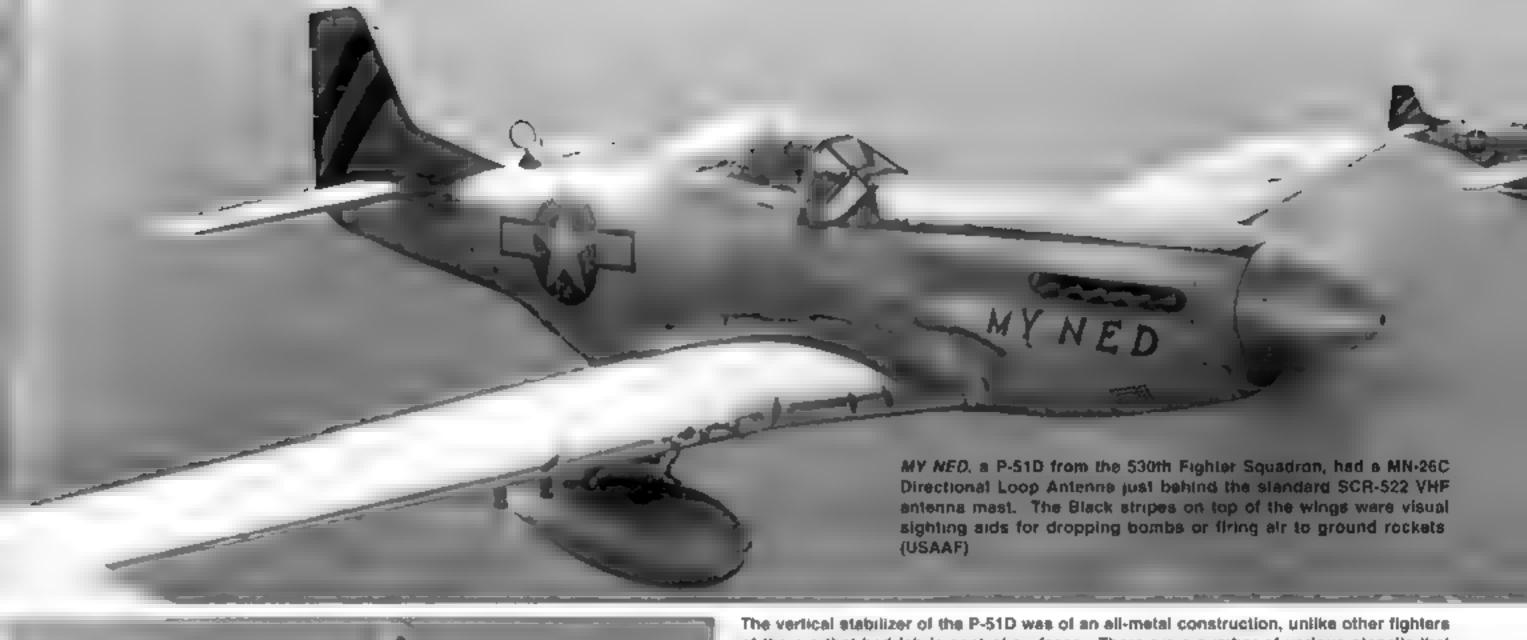
Two North American Aviation technicians install the Harrison Engine/Aftercooler radiator into the rear fuselage section of a P-51D on the inglewood assembly line. Inside the small compartment at the rear of the fuselage is the oxygen fill port. (NAA)

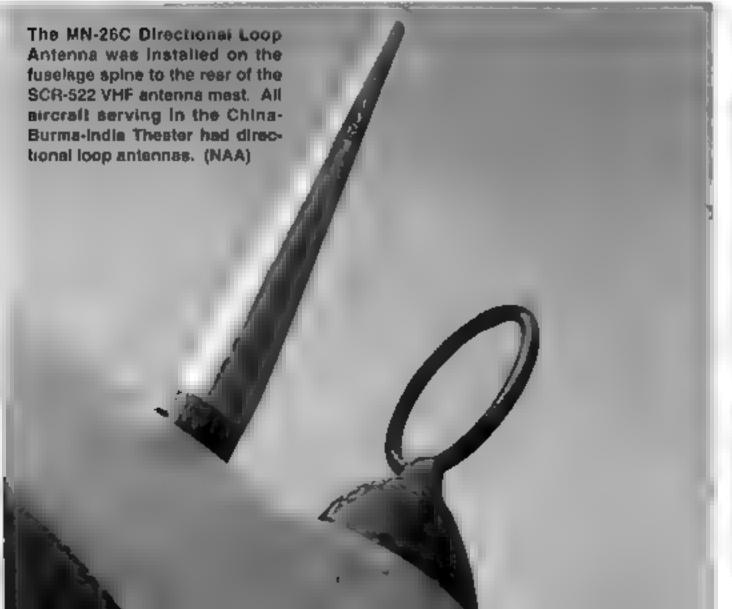


A partially installed Engine/Aftercooler radiator in a P-51D on the inglewood essembly line. The radiator was built by Harrison Radiator Company. The port side of the split radiator cooled the supercharger, the right side was connected to the engine. (NAA)



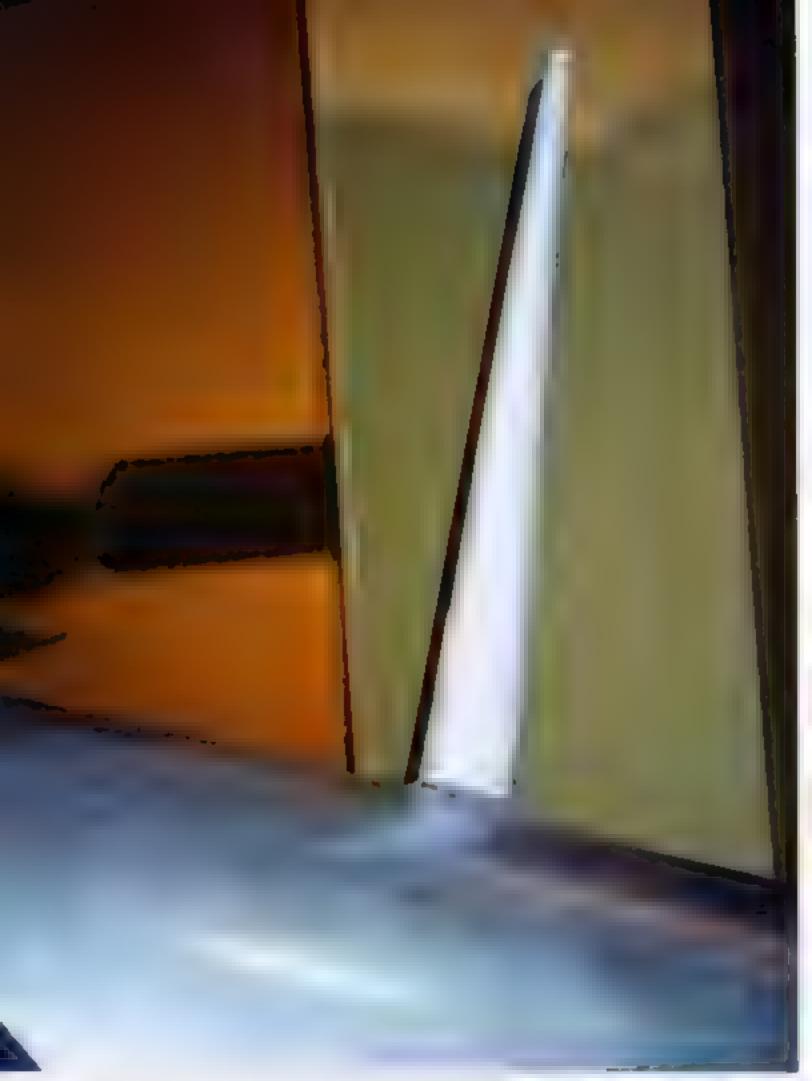
With the engine coolant radiator installed and held in place with metal straps, the next stap was to install the required radio and other avionics equipment and the sliding PlexiGlas bubble canopy. There was a clip board attached to the side of the fuse-lage holding the "ELECTRICAL SQUAWKS" forms. (NAA)





The vertical stabilizer of the P-51D was of an all-metal construction, unlike other fighters of the era that had labric control surfaces. There are a number of various stencils that have been applied during the post-War years. Production alreaft during the war carried very few stencil markings. (USAF)



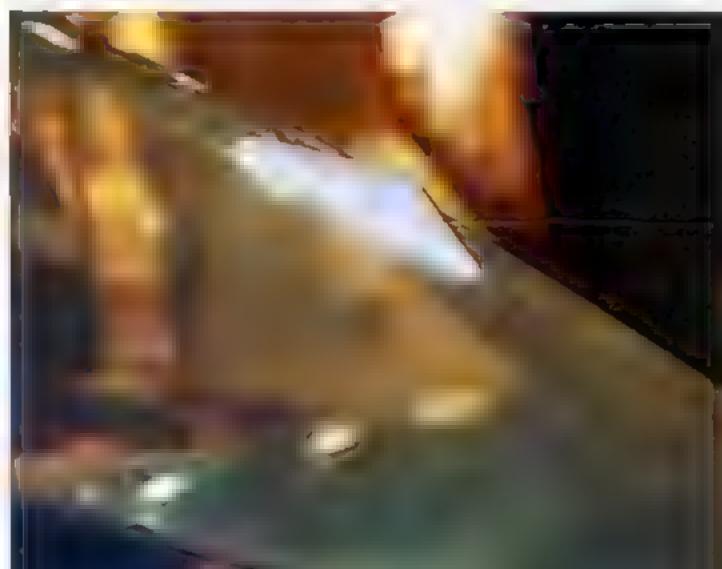


The VHF antenna mast for the SCR-522 radio equipment. This antenna mast was also used with the earlier SCR-515 radio equipment used on early P-51Ds and Ks.



The attachment point that connected the SCR-274N antenna wire to the leading edge of the vertical fin had a coll spring that kept the correct amount of tension on the antenna wire at all times.

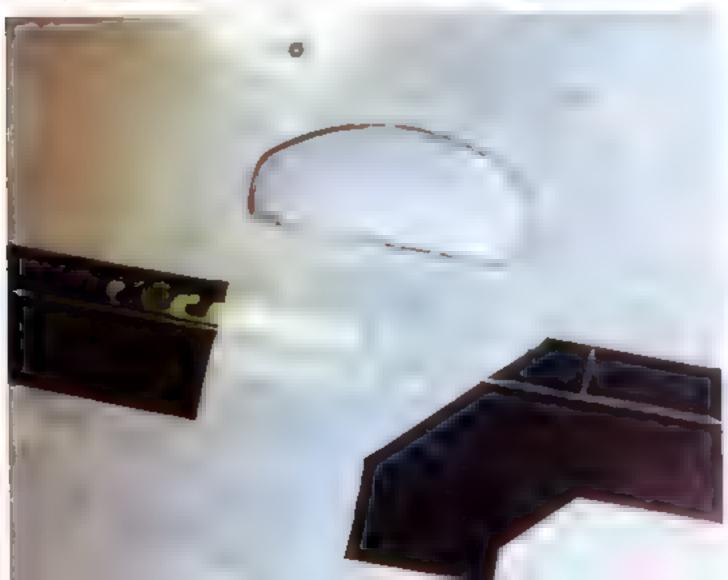
The SCR-274N antenna wire went into the PlexiGlas bubble canopy of the P-510 through this small metal guide that had a roller inside to minimize wear on the antenna wire.





The P-51D had many small ports around the cockpit and luselage. This one on the port side under the canopy was for firing the flare pistol. The canopy side rail has a number of holes, and a Black leather weather seal.

Also on the left or port side of the fuselage was a small spring-loaded push-in door used for the pilot's hand as an assist when he climbed into the sircreft.





The fuselage fuel tank filler cap was on the port side just under the sliding portion of the PlexiGlas canopy. All fuel filler caps were painted Red. The grounding port was used to discharge any buildup of static electricity

There was a slot in the upper part of the fuselage spine that contained a track on which the sliding portion of the PlexiGlas bubble canopy moved. The track kept the sliding canopy centered during operation.





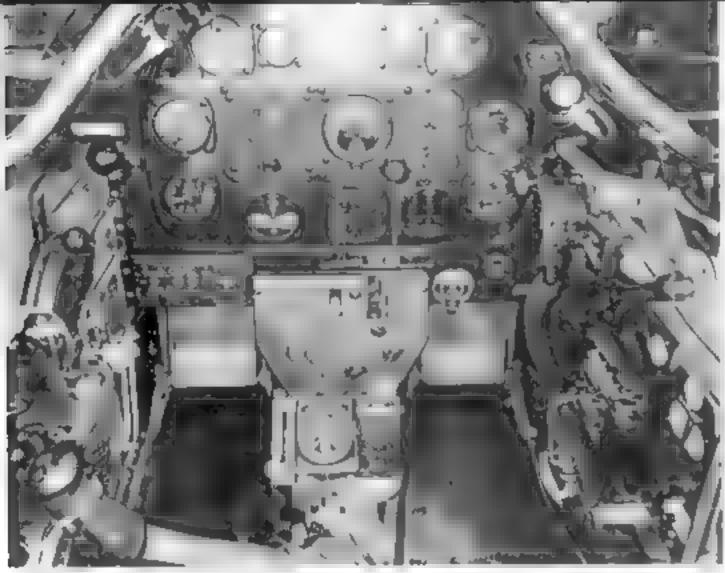
Ground personnel push a 462nd FS P-51D to its dispersal area at North Field on two Jima in July of 1945. Pacific-based Mustangs had dual AN/ARA-8 VHF entennas. The APS-13 Tall Warning Radar entenna is just above the "60" on the fin and was carried on both sides of the vertical tall. (USAAF)

Sergeant Kohlas sitting in the cockpit of Lieutenant Colonel John C. Meyers' P-S1D PETIE 2, with his arm on the canopy stide track. The holes in the rear brace of the PiexiGlas canopy are visible, as is the bulge in the canopy, just above where the pilots head would be, (via Tom Ivie)

A crashed P-51D from the 362nd FS at Yoxford in April of 1945, showing the SCR-522 radio equipment behind the seat. The radio equipment sat on a metal frame just above the fuselage fuel tank. (USAAF)

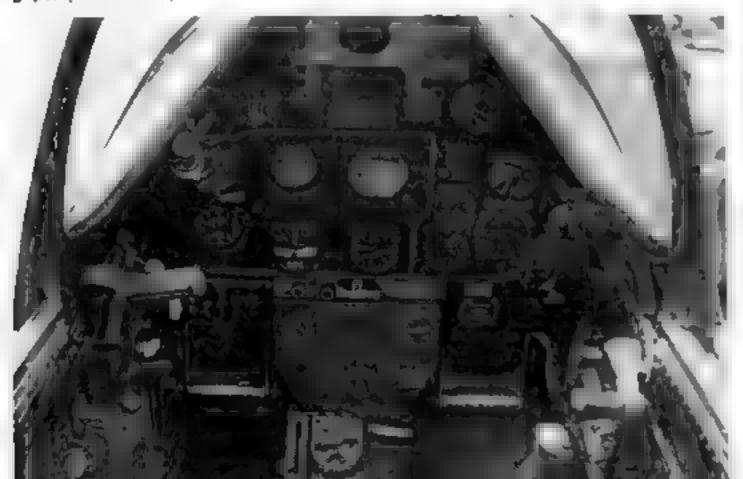


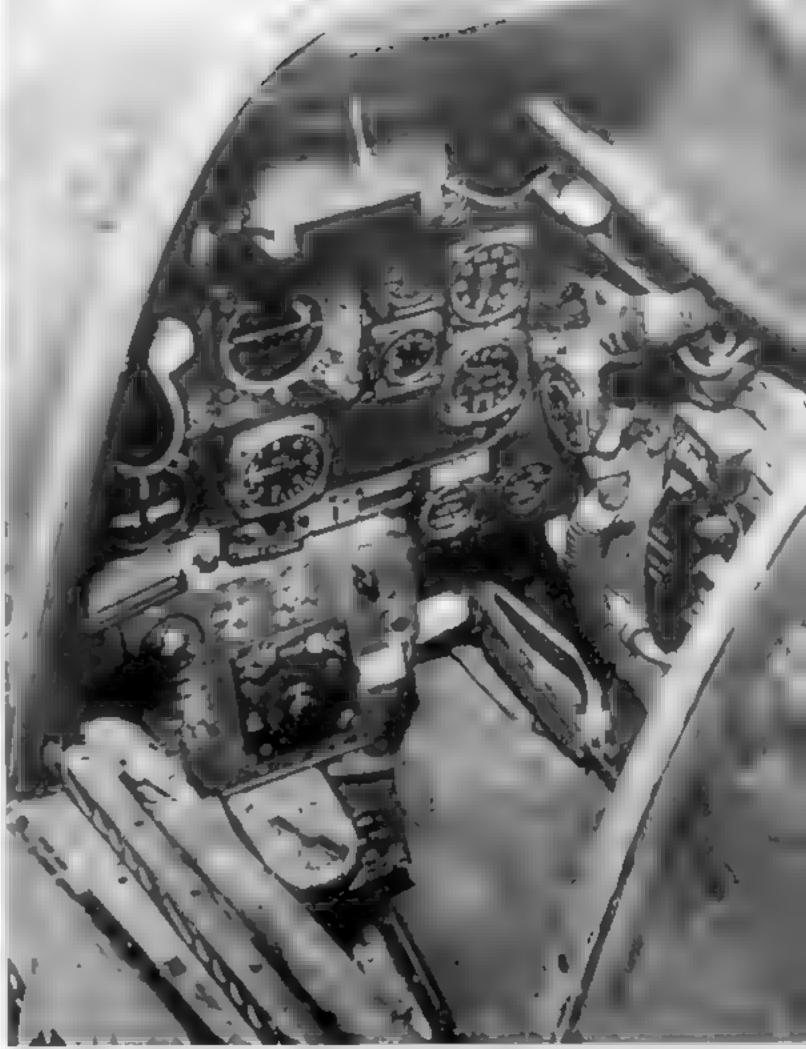




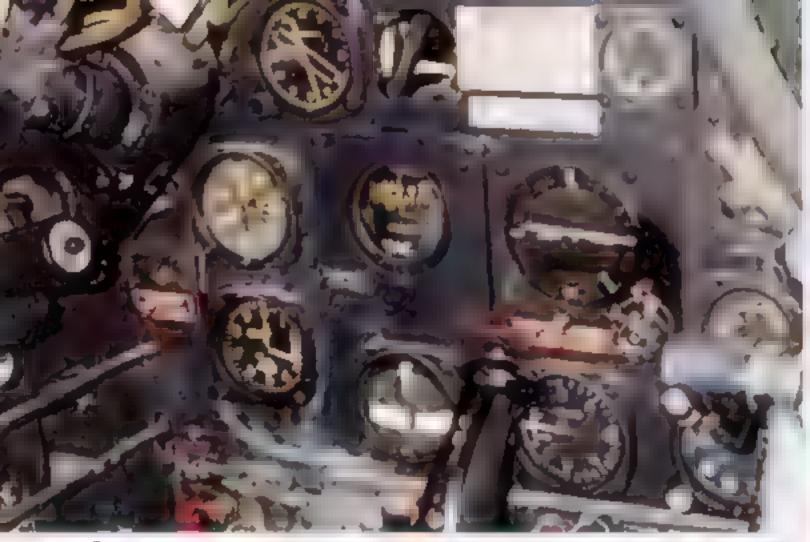
Looking straight shead at the instrument panel of a P-51D Mustang shows how compact the layout was. On the underside of the instrument panel shroud are a pair of lights which illuminated the instrument panel at night. The large switch on the lower panel is the engine ignition. (via Jeff Etheil)

This restored P-51D warbird, shows many of the changes the cockpit underwent over the years. The basic instruments remain the same, although updated to a later style. The tower panel has been extensively modified, as has the throttle mechanism and hand grips. (Jim Sullivan)



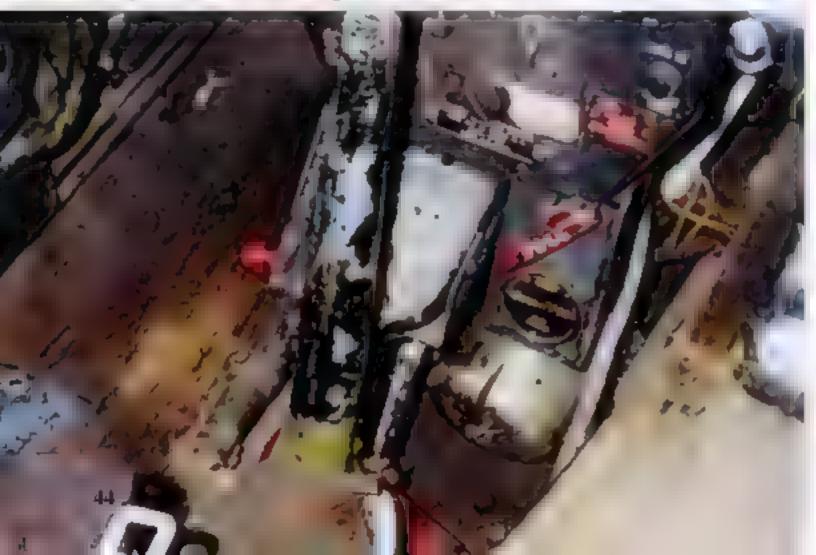


The P-51D/K cockpit was as crowded as most fighters of its era. The walls and floor were painted interior Green 611 (FS 34151), while the instrument panels and most of the equipment (radio, oxygen regulator, throttle, etc) were Black. The heater/defroster tube that ran just inside the canopy rall. (USAFM)



The port side of the instrument panel showing the (from upper left) compass, clock (removed), suction guage, artificial horizon, "caged" directional gyro, RPM tachometer, attimeter, turn and bank indicator, and rate of climb gauges.

The lower instrument panel showing the drop tank release panel (behind the control stick), the fairing door emergency refease handle, and hydrautic pressure gauge. The cockpit has a well worn wood grain floor.





Looking directly down into the cockpit we can see the parking brake handle (behind the control stick grip), the ignition switch, the fuel shutoff lever, underwing stores selector panel, and the control stick, with a canvas "boot" around the base.

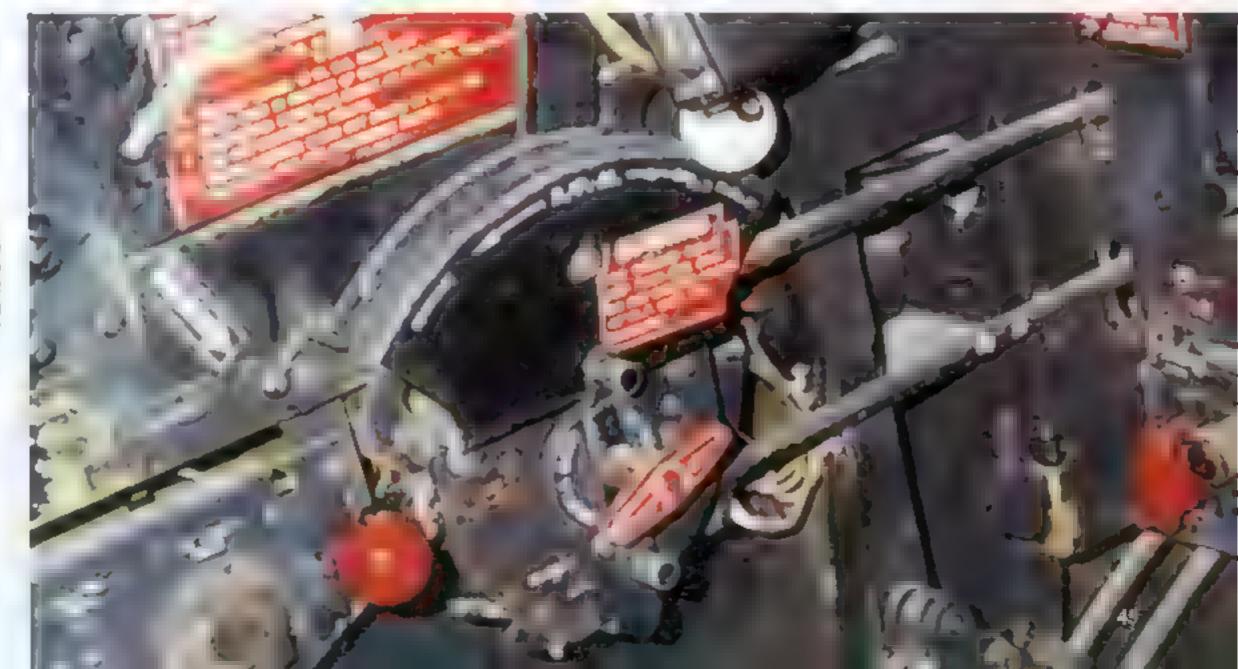


The port sidewall console had the rudder and alleron trim knobs on top, with the slevator trim wheel on the side. The large handle exiting from under the trim wheel is the landing gear selector, which also had the port and starboard bomb salvo handles on top.



Directly beside the seat on the port wall were all the information placerds, including (from L-R) North American Aviation contract and Army Air Force serial number, dive and flap speed restrictions, and the pilot's check list. The flare pistol, map case, and spare flares are under the placerds.

The throttle quadrant with the throttle on the very top. In the middle is the propeller mixture control. Just behind the throttle is the lighting panel for both interior and exterior lights.



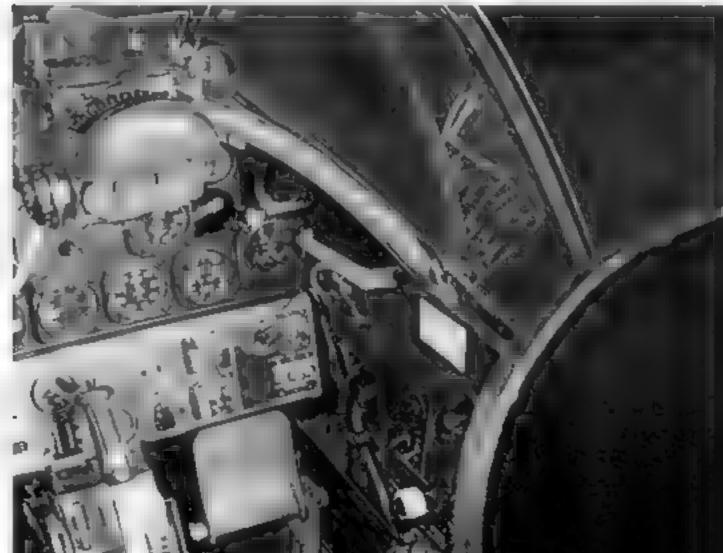


The N9 reflector gunsight is visible in the cockpit of this early P-S1D. There is also a ring and bead' sight beside the N9B gunsight glass, which could be swung into place should the N9 sight maifunction. (USAAF)



The mount and reflecting glass for the N9 gunsight have been attached to the top of the instrument panel shroud, but neither the actual gunsight nor the iring and bead' sight have been installed. (NAA)

This is the K-14A computing gunsight that was used on all P-51Ds from the D-20 on. The dial under the reflector glass has marks indicating the measurements, in feet, of an arroraft's wingspan, (NAA)



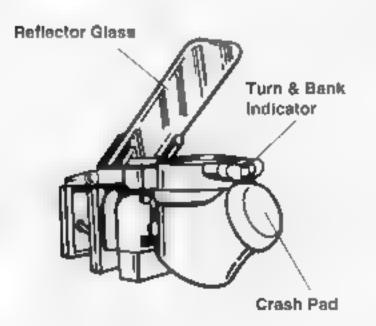


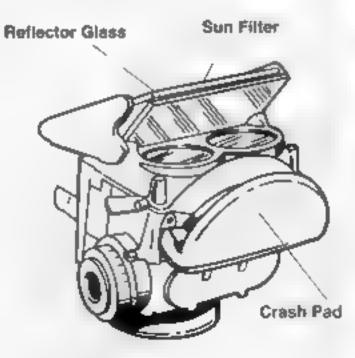
This K-14A gunsight has been modified to make it much simpler to dial in. Just set the marker on the German aircraft type that's in front of you and the gunsight does the rest. The rubber pad on the front of the gunsight was a protective device for the pilot a head. The K-14A has a double reliector glass. (NAA)

## P-51 Gunsights

N-9 Gunsight

K-14A Gunsight







Captain Ray Littge in the cockpit of his 487th FS P-510, serial 44-72216, showing the canopy reinforcement bar and the back of the armored plate for the pilots seat interestingly, Captain Littge's P-510 does NOT have the SCR-274N wire antennal (USAAF)

As a mechanic works in the cockpit, we can see one of the many different radio equipment set-ups behind the seat of this No. 2 Squadron/SAAF F-51D undergoing a complete overhaul in Japan during the Korean War. The ARC-3 was the usual radio equipment for P/F-51Ds at this time. (USAF)

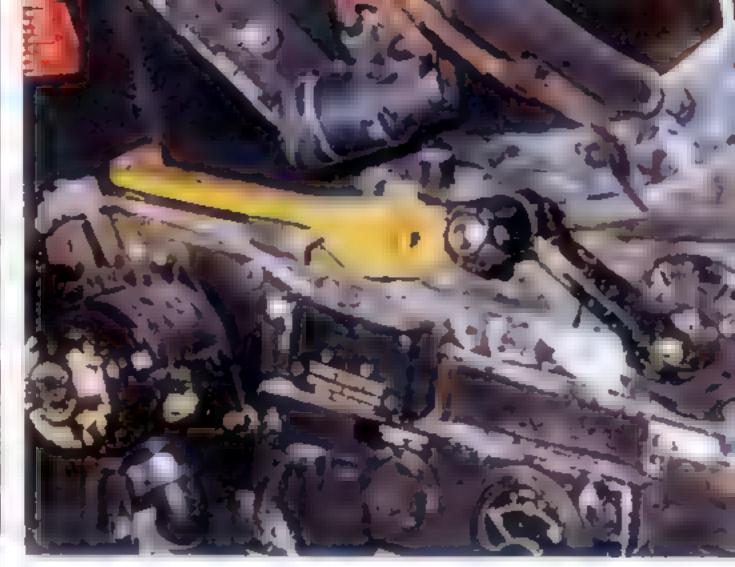




The right side of the instrument panel had the (from top left) section gauge, manifold pressure gauge, tachometer, carborator air gauge, artificial horizon, coolant temperature, oil and fuel pressure gauges, and the accelerometer. The round item on the right side wall is the oxygen regulator.

The radio range receiver control box showing the disl with increments for each frequency. The Green rubber hose is the oxygen hose that supplies oxygen to the bottom of the pilots face mask.





The crank handle opened and closed the sliding portion of the canopy. The Yelfow bar in front of the canopy crank is the emergency canopy release. The small box is the exterior light circuit breaker.

On the right side of the seat under the Engine Limitation placard is the VHF Frequency Selector box with preset buttons for standard frequencies.





This web-worn head rest is fastened to the top of the armor plate behind the pitols seat. The head rest was leather over straw ticking. Just under the edge of the front bow of the silding canopy is a rear view mirror installed in the post-War era.

This post-War F-510 has had a sest cushion installed over the basic all metal bucket seat. During the War, the pilot's parachute was all the padding he had to sit on. The shoulder straps attach to the middle of the back of the seat frame behind the seat.







The rudder pedal bar assembly of a P-51 warbird under restoration, with a closeup of the right rudder pedal showing the North American Aviation logo and instructions to releasing the parking binds.

The seat bottom has two reinforcement bars attached. The wide lap belt restraints are boiled to the seat frame. The USAFM P-51D, restored from a West Virginia ANG F-51D, had a seat cushion added to the seat bucket.





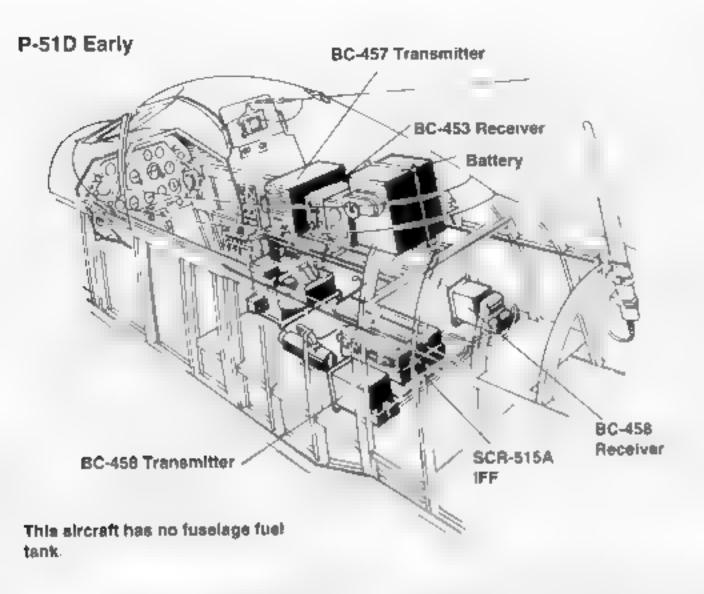
A 4th Fighter Group pilot talks to his crew chief prior to the next mission to Berlin. The external fairing on the top of the canopy covers the streamlined rear view mirror. The front of the K-14A gun sight is also visible. (via Jeff Ethell)



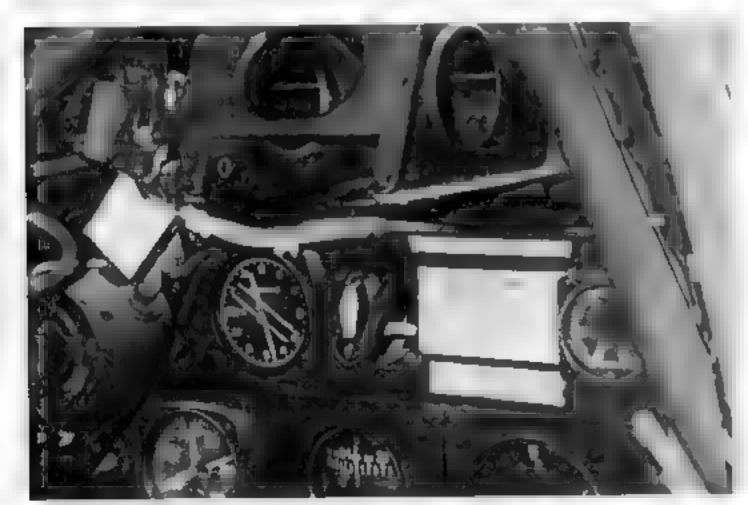
Colonel Everett Stewart. Commanding Officer of the 4th Fighter Group at Debden, in the cockpil of his P-51D SUNNY VIII during 1945. Colonel Stewart had a pair of British Spittire rear view mirrors mounted to the top of his windscreen. (via Dick Martin)

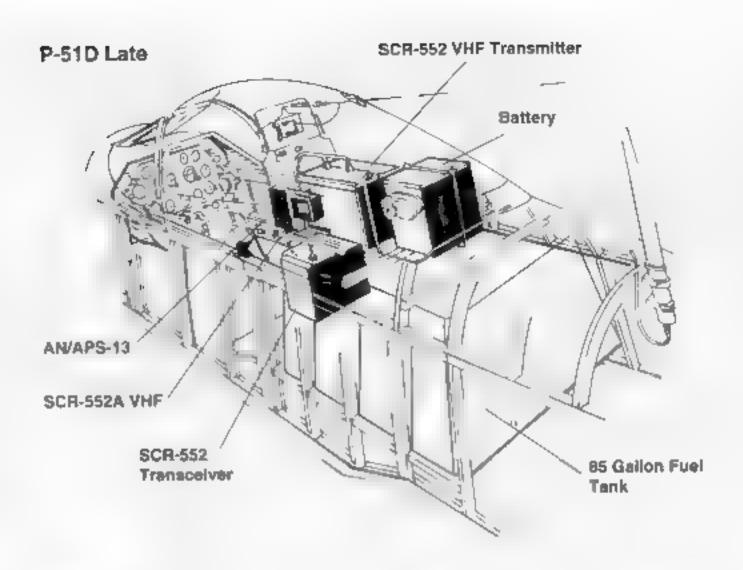
Lieutenant Robert Barnhart beside his 359th FS P-51D MARGIE'S DARLING at Martiesham. Lieutenant Barnhart's P-51D also had dual Splitfire-type mirrors attached to the top of the windscreen. The addition of Spitfire-type mirrors was the preferred installation for 8th and 9th Air Force Mustangs. (USAAF)





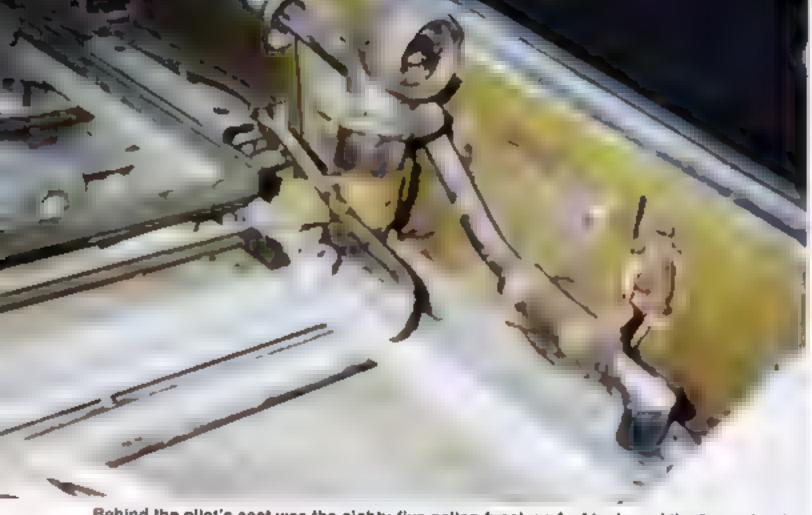
The mount for the K-14A gunsight (upper), the gunsight wiring harness, and the gun camera switch (upper left). There are a number of placards on the instrument panel, some of which were not on Second World War aircraft.





The right canopy internal stide rail and weather seal, which was made of leather. The canopy had a manual crank which was located in the upper right part of the cockpit.

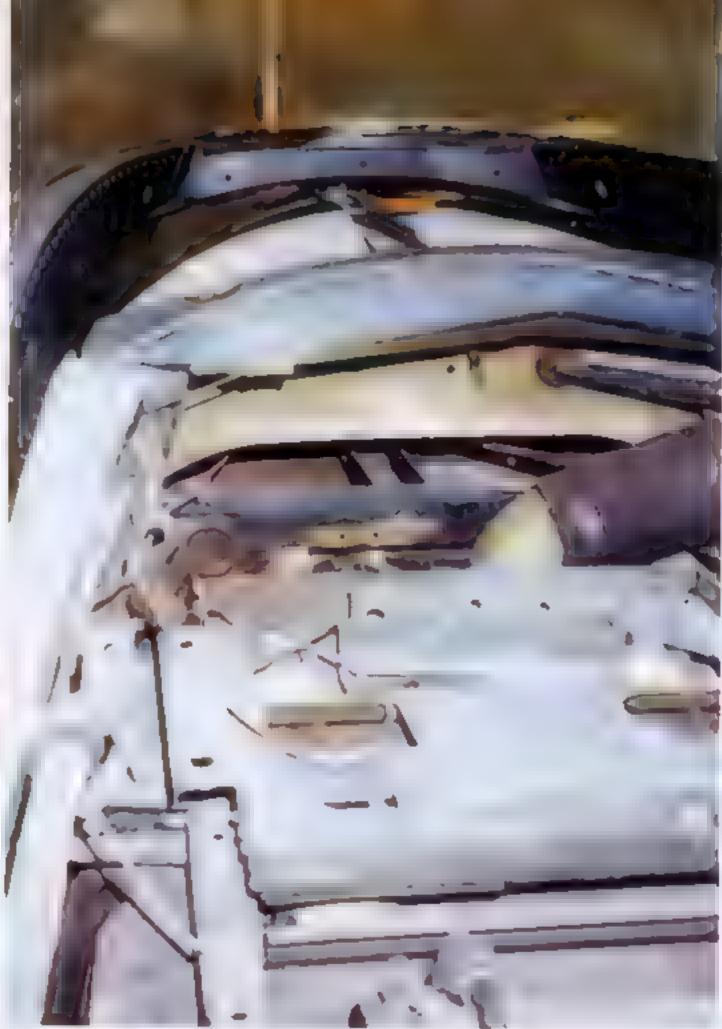




Behind the pilot's seat was the eighty-five gallon fuselage fuel tank, and the frame for the SCR-522 radio equipment. The fuel tank gauge, portions of the radio wiring, and fuel lines can also be seen.

Located at the extreme rear portion of the canopy area is a flat area around the canopy silde mechanism. The bell crank pulley and cables that operate the canopy can be seen.





Looking to the rear of the cockpit behind the right side of the seat is more of the radio equipment mounting frame (the radio itself is missing), part of the rear cockpit wall, and the fuel filler pipe for the eighty-five gallon fuselage tank on the port side of the rear cockpit area.

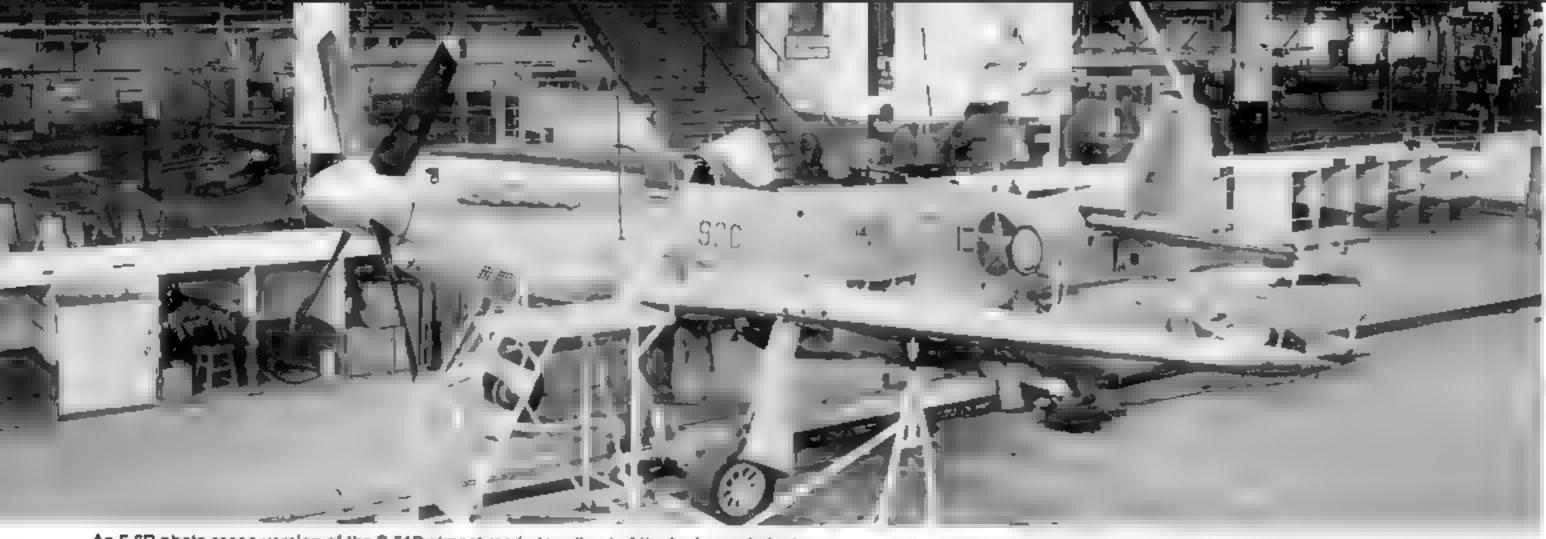


The engine/aftercooler radiator intake was distinctive and common to all the Merlin-engined P-51 series. Air was inducted through this scoop, passing through the oil cooler and radiator, then exiting through doors under the rear fuselage. There was a small reinforcement bar installed just inside the air intake duct.





53



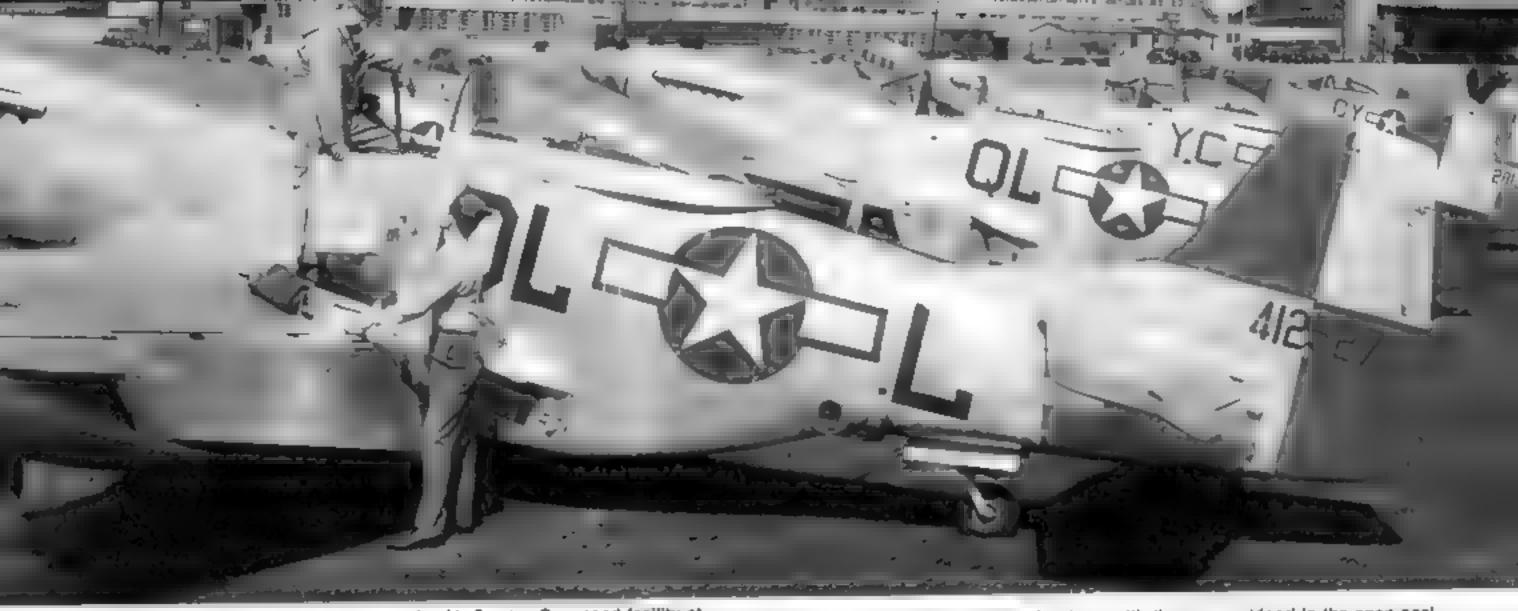
An F-6D photo recon version of the P-51D atmost ready to roll out of the inglewood plent. Some F-6Ds, like this aircraft, had three cameras in the rear fuselage; a large K-17, a K-24, and another K-24 under the fuselage. Unlike most reconnaissance aircraft, the F-6D had the full armament of a standard fighter. (NAA)

SYMON'S LEMON was a RF-51D credited with twenty-six photo recon missions with the 45th Tactical Reconnaissance Squadron during the Korean War. In 1947, the Air Force redesignated the F-6D as the RF-51D. There is a direction finder loop antenna on the rear fuselage for missions deep into North Korea. (NAA)



A 45th TRS crew chief loads one of the K-24 aerial cameras back into the hatch of the RF-51D flown by Captain Bert Vaut Jr. at Kimpo Air Base, Korea during 1951. (USAF)





pair of 22nd TRS F-6K photo recon Mustangs at the Air Service Command facility at speke, England. The afforaft were made ready for service with combat units at Speke, which included painting the unit markings of the squadrons to which the F-6Ds & Ks were assigned. These F-6Ds have only the single oblique K-24 camera and the under-uselage K-24. (USAAF)

The rear of the K-24 camera mounted under the fuselage of a 67th TRW F-6D with 9th AF. The door over the camera lens was added to protect the lens from mud and rocks thrown up during takeoff and landing. (via Tom Ivie)



The K-24 camera mounted under the fuselage, with the camera 'door' in the open position. First developed by combat units, the door was then added to production F-6s on the assembly line. The door was closed until over the target, then was manually opened by a lever in the cockpit. (via Tom Ivie)







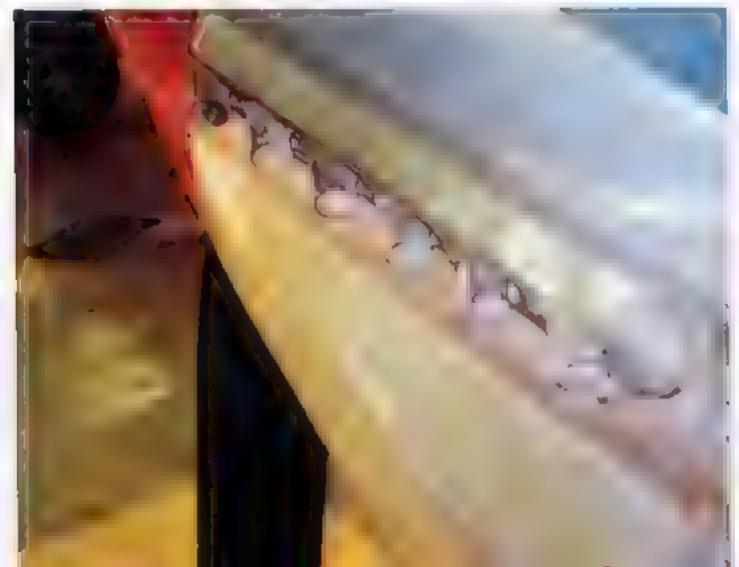
Looking into the open coolant radiator exhaust door reveals the reinforcement rod and door actuator. The engine/aftercooler radiator was made by Harrison Radiator Company in Los Angeles. The interior color of this area was Chromate Yellow from the factory, although this Mustang has been repainted in Chromate Green.

TULIE SCOTTY & 7, a RF-51D assigned to the 45th TRS. The Polka Dot Squadron, at Taegu during the Spring of 1951. The RF-51D has the three-camera installation. This aircraft is painted Silver overall, except for the replacement panel over the radiator area, which is Natural Metal. (Ron Picciani)



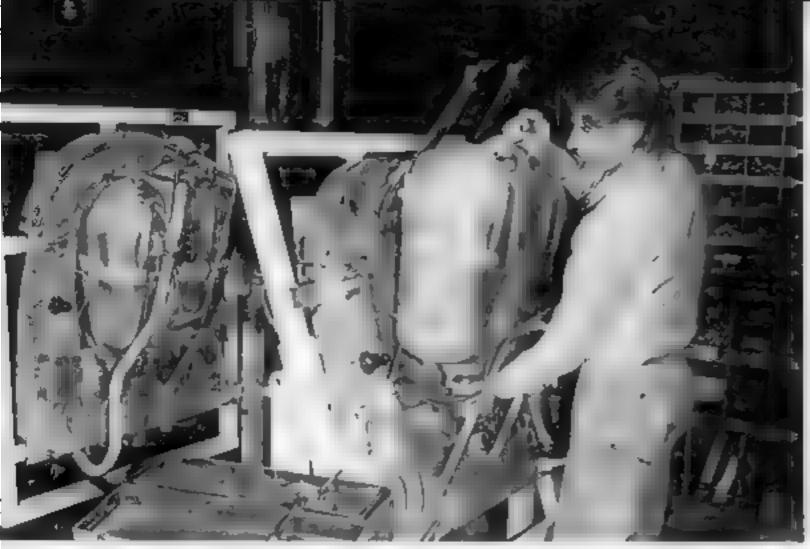


The left and right twelve cylinder Merlin engine exhaust pipes and shrouds. Each cylinder had its own individual exhaust stacks. The shrouds did a couple of things, including adding to the serodynamics around the open exhausts, and deflecting exhaust heat from inside the engine compartment.



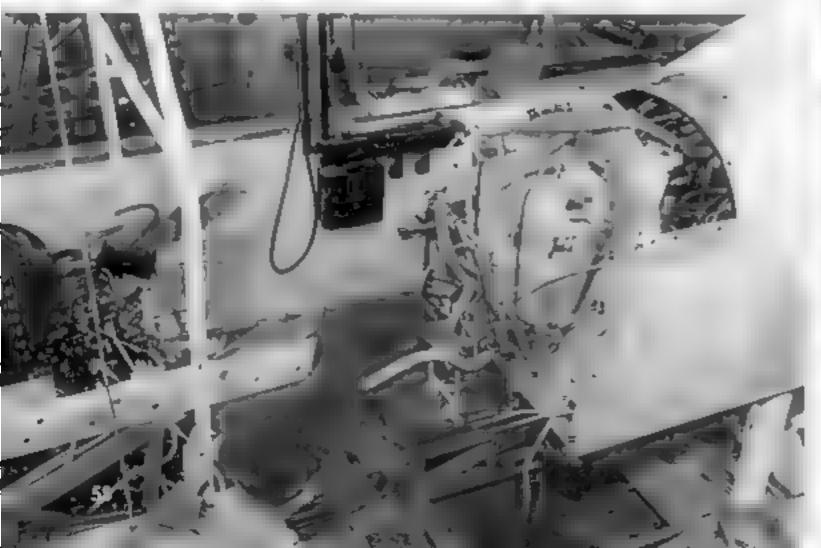


The legendary John Godfrey (L) and Don Gentile standing beside Gentile's 4th FG Mustang SHANGRI-LA at Debden, England during early 1944. Gentile has had the exhaust shrouds around the exhaust ports removed, a common practice in combat units. (USAAF)



Installation of the oil tank on the firewall was done prior to bolting the engine assembly and engine mounts to the main fuselage. The firewall is painted Chromate Yellow at the factory, while the tank and lines are aluminum, (NAA)

After assembling the oil tank to the firewall, the firewall is installed to the main fuselage and all fuel, coolant, and oil lines are installed. The fuselage is now ready for the engine to be installed. (NAA)

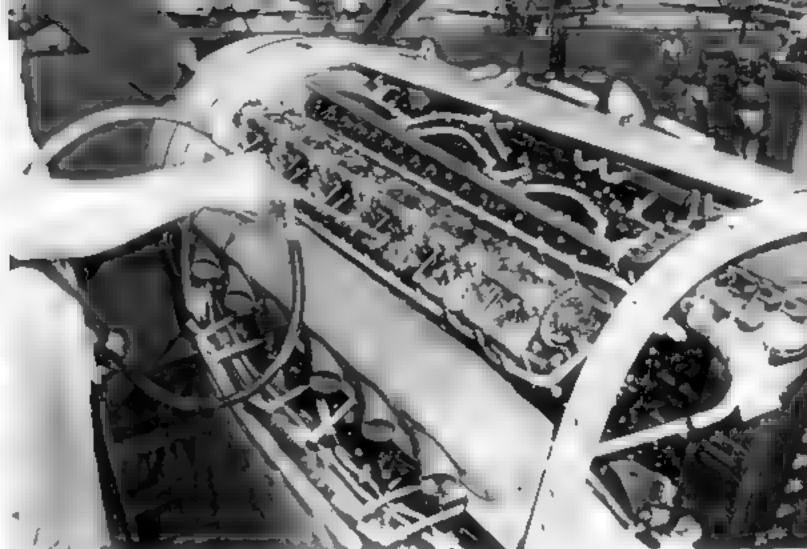




A North American Aviation technician makes adjustments to the engine and mounting frame immediately prior to connection to the main fuselage/firewall assembly. The engine mount cradle is painted Chromate Yellow. (NAA)



North American mechanics make some final adjustments to the rear coolant pump and coolant lines prior to the initial engine test and run-up. The engine was fully tested at the factory prior to acceptance by the Army. An interesting item is the fact that the interior wheel well door reinforcement bracing was painted in a primer color. (NAA)



A North American mechanic uses a high pressure gun to force lubricant into the V-1650 Merlin head assembly prior to engine run-up. The basic color of the factory-built Merlin engine was Satin Black. (NAA)

A North American mechanic adjusts the 'A' magneto on the right side of the engine. The fuselage frame to which the exterior body panels are attached is Natural Metal, while all the engine mount rails and brackets are painted Chromate Yellow primer at the factory. After the war, many of the Yellow parts were re-painted Chromate Green. (NAA)



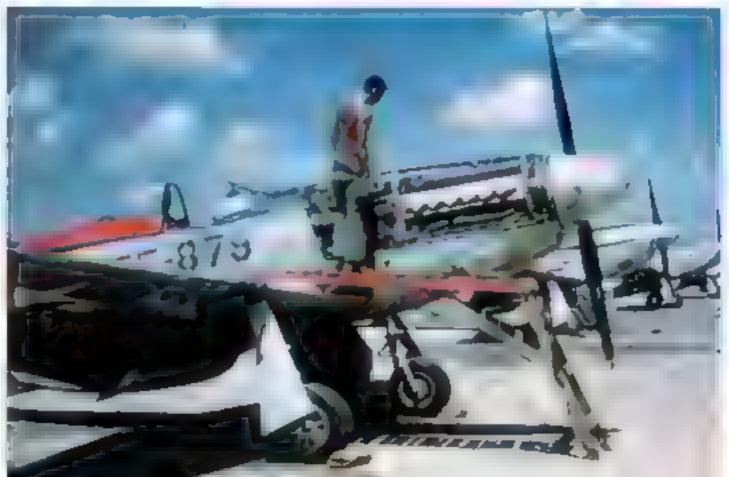


Two 361st FG mechanics perform regular maintenance on the big V-1650 liquid cooled Marlin at Little Walden, England in June of 1944. The mechanic under the nose is working on the carburetor air duct. All the exterior panel bracing is in Natural Metal. (USAAF)



This 355th Fighter Group mechanic is adjusting the fuel pump on a P-518 at Steeple Morden. The engine installation was identical from the P-518 through P-51K, including the F-6 variants. The engine mount is pointed Chromate Yellow (355th FG Asan.)

A mechanic checks the big Merkin of this 67th FBS F-510 in Korea. By the Korean War, many of the engine mounts and accessories had suffered great wear, and were pointed and re-painted many times in colors that differed from the factory. The makeshift work stand used to service the engine was typical of the equipment available in Korea. (via Warren Thompson)



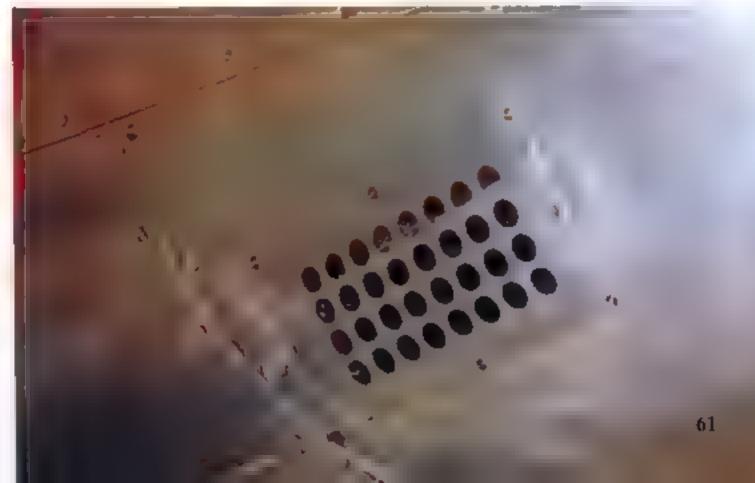


Two mechanics adjust the propeller governor on *DJIGOOBLIE II*, a 4th Fighter Group P-51D at Debden in June of 1944. The Hamilton Standard four-bladed prop was eleven feet two inches in diameter. The stenciling on the propeller cuff was in Yellow. (USAAF)



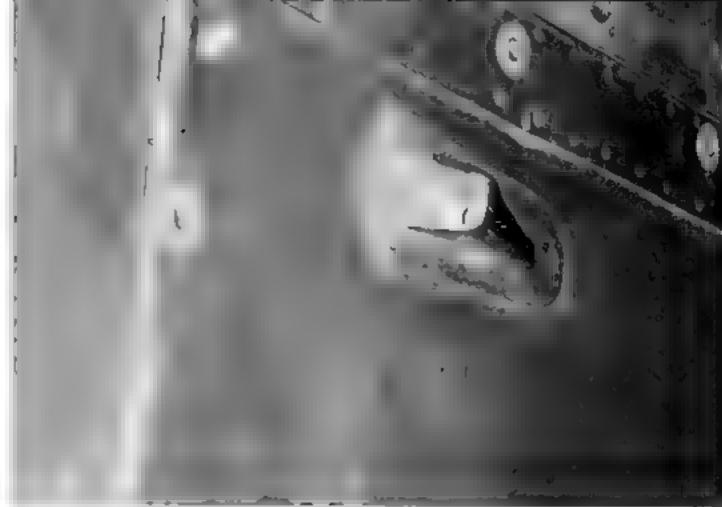
The spinner and propeller on the restored P-510 at the U.S. Air Force Museum. This Mustang has a Hamilton Standard propeller without the cuffs, which was rarely done in the combat units during the Second World War.

The perforated panel under the exhaust stacks on each side of the nose, was a cover over the carburetor air filter. Some aircraft had a solid piste over the carburetor filter which was added for operations during cold weather.

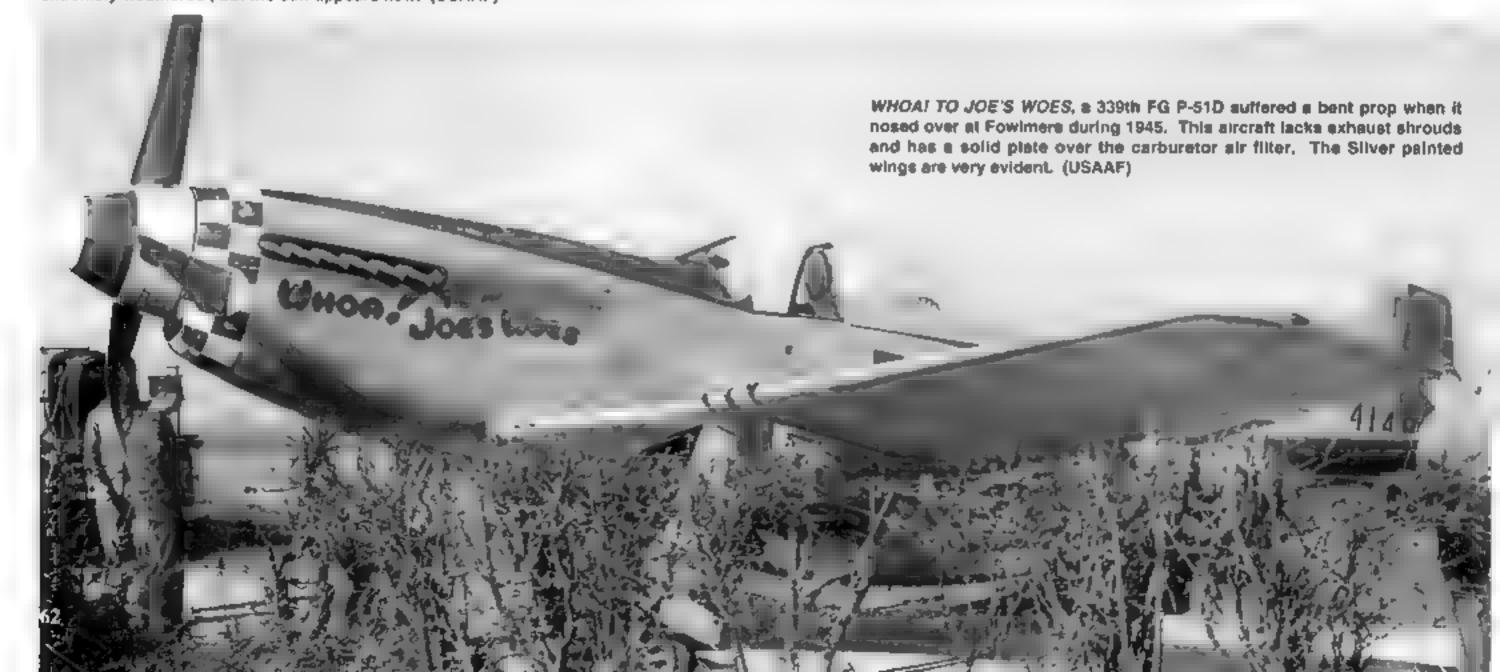




The pilot of PUDDIN' II, a 364th FG P-51D, checks the carburetor filter panel during his "Walk Around" at Honington. The back of the Hamilton Standard propeller blade was extremely weathered, but the cuff appears new. (USAAF)



Some late P-51D aircraft had this small scoop added over the battery vent hole on the left side of the nose. Early P-51Ds had the battery in the rear cockpit.

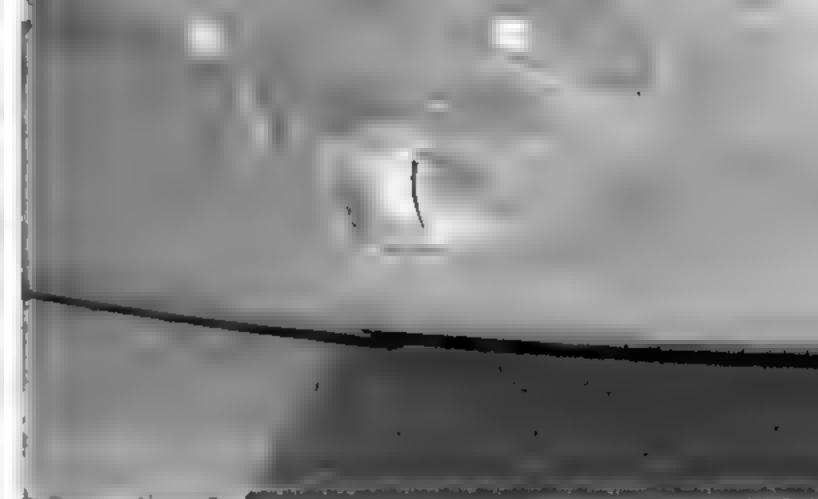




The tail section was fully assembled before being transported to the main assembly line for installation on the completed main fuselage section. The rudder was of a different grade of sluminum than the fuselage. (NAA)



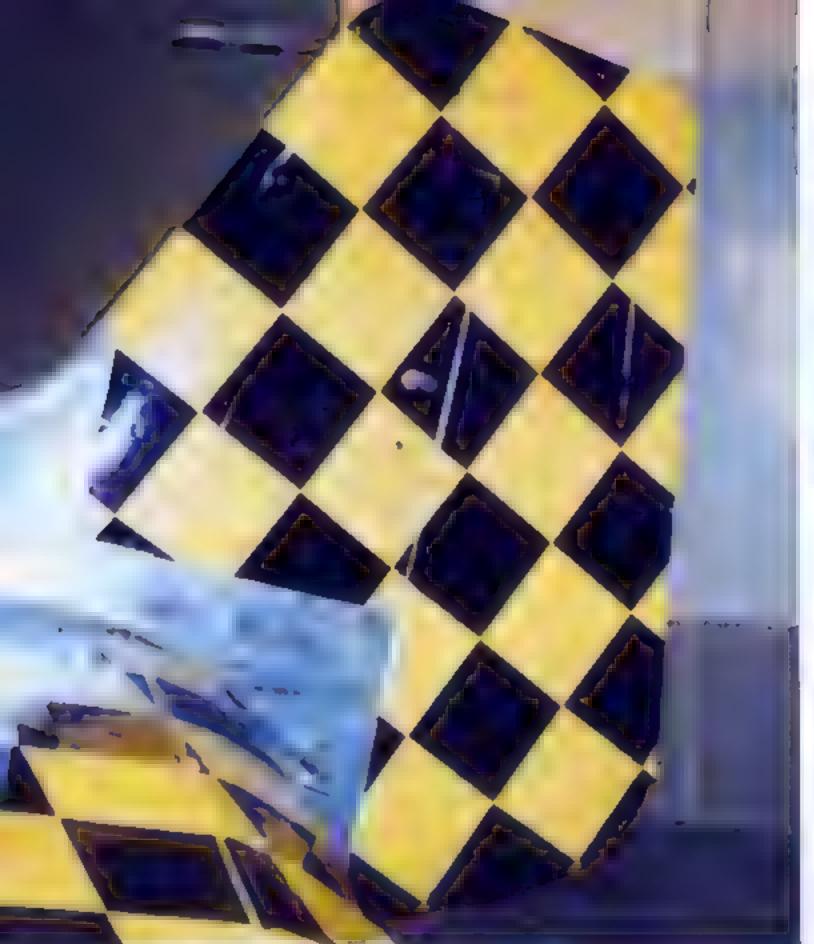




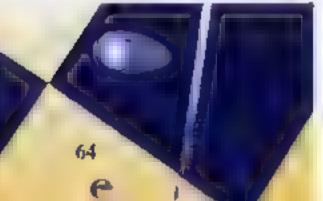
This small scoop located on the lower right fuselage was the fuselage fuel tank drain

The right rear fuselage section of the U. S. Air Force Museum's P-51D showing some of the service doors and panels used to service the rear flight controls.





The vertical stabilizer assembly on the U. S. Air Force Museum Mustang, including the rudder assembly, rear navigational light, and attachment and tension spring for the wire uniform.



In the middle of both sides of the vertical fin is a small White formation light. The small hole below the light was a service point for the rudder controls.



The dorsal fin fillet was common on all fate versions of the P-S1D/K, including the F-8s. The fin fillet was added to the Mustang to increase directional stability

Looking into the elevator recess of the horizontal stabilizer reveals the walled-in Interior section.







The elevator trim tab assembly was hinged at three points, and had a short actuator arm on the underside of the horizontal stabilizer. The pilot dialed in the amount of frim that he needed with a small wheel mounted on the left side of the cockpit.



(Right & Left) Looking at the retractible tall wheel assembly of the U.S. Air Force Museum s.P-S1D. The tire had very little tread, usually just two grooves. The USAFM restored Mustang has no tail wheel doors, which were deleted on many post-Wer Mustangs still in USAF or Air National Guard service.





The Bazooka tube rocket launchers were the same on all Mustang variants, using the same mounting frame to attach it to the underside of the wing. The Bazooka fired a 4.5 Inch High Velocity Aircraft Rocket (HVAR), and were used extensively in both the European and CBI Theaters. (NAA)



A very unusual underwing ordnance load was this droppable tank that held air-sea rescue equipment, including a small rubber raft. (via Jeff Etheli)

Two views of the 5 inch HVAR rockets and Zero Rail launcher atubs used on the P-51D/K. Atthough the P-51 could carry up to ten HVAR rockets, the usual loading was six when drop tanks were installed and only four when 500 pound bombs were carried. (NAA & USAF)





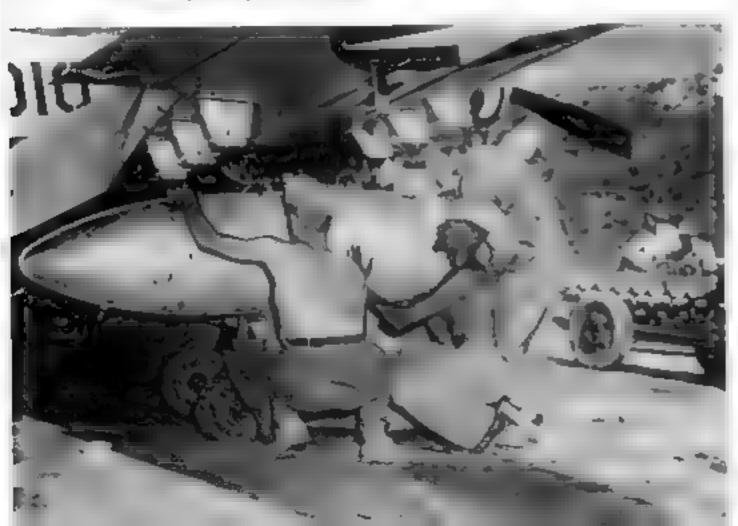


Captain Ebe Ebersole stands by a 12th Fighter Bomber Squadron F-51D in Korea during August of 1952. Mustangs in the Korean War flew fighter-bomber missions covering the road and rail net in North Korea. The inner set of rocket launch stubs are not used. (Howard E. Ebersole)



This is the Fighter Aircraft Bomb Loading Device, a small trailer with a hydraulic jack to lift the ordnance to its position under the wing. (USAF)

Napalm bombs came in many different sizes and shapes. They were normally made up from old discarded underwing fuel tanks that were filled with jellied gasoline, with a modified hand grenade as the explosive. The tanks were hung on the aircraft empty, then filled with Napalm. Napalm bombs were usually painted Flat Yellow, although Dark Red and even Silver were common. (Mike Byere and USAF)









Captain Wallace Hopkins in his 374th Fighter Squadron P-51D, FEROCIOUS FRANKIE, armed with a pair of 500 pound general purpose bombs for a fighter-bomber strike into France during July of 1944. Captain Hopkins' Mustang is an early P-51D model without the fin fillet. The upper surfaces of FRANKIE are overpainted with Olive Drab. (USAAF)

(Left) A large pile of ordnance waiting for the order to "bomb 'em up!" at a 9th Air Force airfield in France. The Silver tanks are seventy-five gallon drop tanks, with 500 pound general purpose bombs stacked in front of 1000 pound bombs. The color bands on the bombs indicate the type of explosive. Bomb fins and fuzes are instalted separately Alongside the bombs are cases of belted. 50 caliber machine gun ammunition. (via Jeff Etheti)



The prior of *DOTTIE* talks with the ground crew that is about to load a 500 pound bomb on his 67th F6S F-51D during the Korean War. The bomb cradle holds the bomb at the precise angle of the pylon onto which the bomb will be hung. (USAF)



The ground crew of this No 2 Squadron/SAAF F-510 use a different, updated bomb loading device to hang a 110 gallon napalm bomb on MISS MARUNOUCHI at Chinhae, Korea during 1952. (USAF)





Even with the very long range that the P-51D was capable of, the Pacific Ocean was still too vast to attempt an aerial crossing. Mustangs, like these 45th FS aircraft, were transported by Navy carrier, then off-loaded onto barges at their destination, in this case two Jima. (USAAF)



Willie Willis and the DINNY B, a P-51D assigned to the 462nd FS at North Field. The Mustang has dual antennas and an APS-13 tall warning radar antenna on the vertical fin The volcanic dust of two Jima has "sanded" the stencils off the propeller blades interestingly, the DINNY B has the Red tall stripes of the 458th FS, but carries the emblem of the 462nd FS under the cockpit. (USAAF)



The 76th FS lined up at Hsein, China during 1945. Most of the CBI Theater Mustangs had a circular direction finder loop antenna on the rear fuselage behind the regular antenna mast. The 76th FS was one of the squadrons in the 23rd FG, which had evolved from the original Flying Tigers. (George McKay)

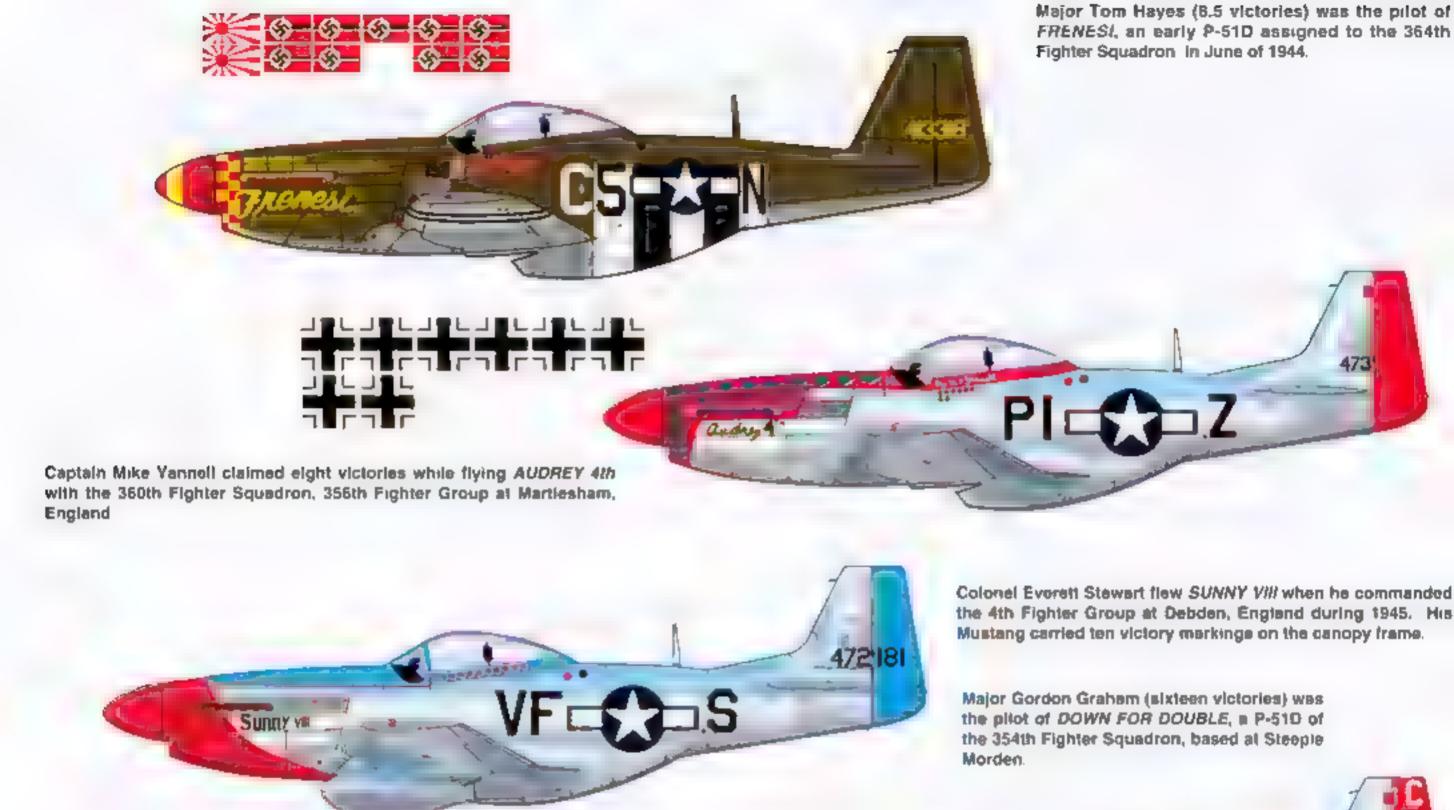


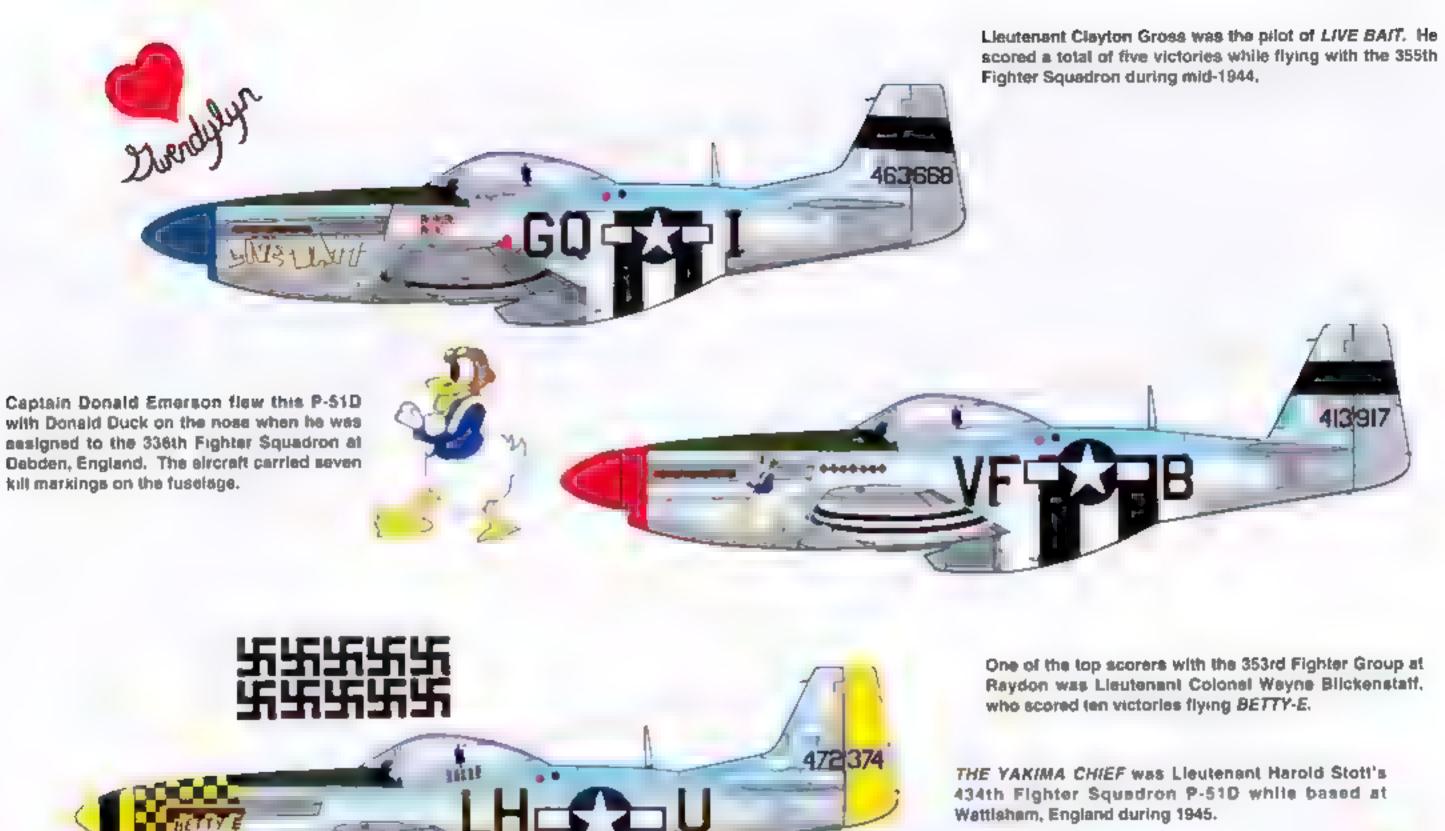
NANCY LEE III, a 41st FS P-51D, sitting on jack stands at Clark Field in The Philippines, is waiting to have her guns bore-sighted during June of 1945. Optical equipment was installed that "looked through" the gun muzzle, and the guns were adjusted to center on "target circles" painted on the signs installed 1,000 inches in front of the aircraft (USAAF)

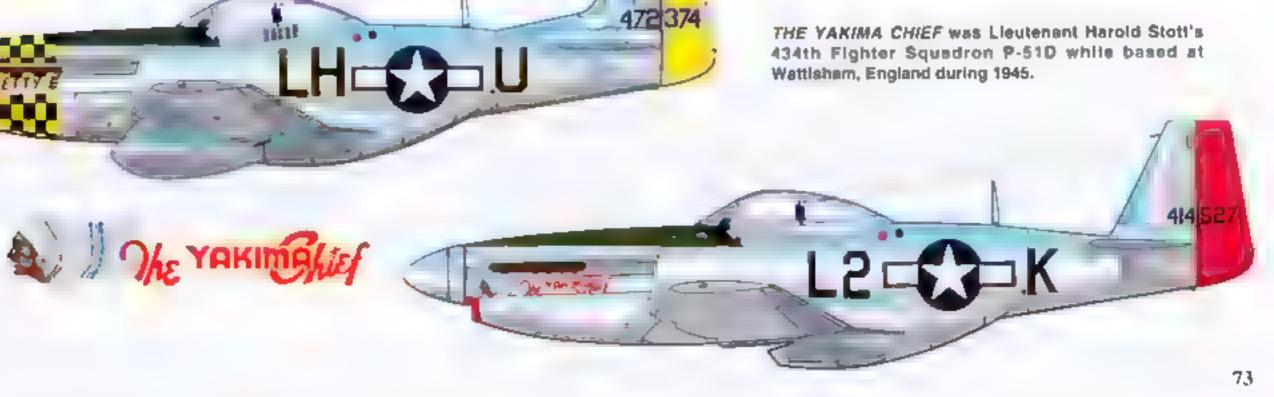
GONZALES, an F-5D with the 2nd ACG based at Cox's Bazar, India in 1945. The F-5D/K was the primary tactical reconnaissance aircraft used in the war, while the F-5 (P-38) was primarily a strategic recon aircraft flying Bomb Damage Assessment missions after a bomber strike. (USAFM)













Tom Hayes flew FRENES! with the 364th FS at Yoxford in the Summer of 1944. Hayes' Mustang is one of the early D models without a fin fillet. Hayes had two Japanese and nine German victories, plus a total of eighty-five missions to his credit. (Tom Hayes)

This Mustang was a rare aircraft, Lieutenant Colonel John C. Meyers' third Mustang PETIE 3rd, with thirty victories under the cockpit. Lieutenant Colonel Meyers flew with the 487th FS as part of the 352d FG - The Blue Nosed Bastards Of Bodney. (via Tom Ivie)



TANGERENE is another of the 364th FS Mustangs at Yoxford during the Summer of 1944. TANGERENE was a P-51D-10. All P-51Ds accepted after June 1944 had the dorsal fin fillet. The 357th FG camoflaged many of their P-51s with Olive Drab or Medium Greem, with Neutral Grey undersides, for the D-Day Invasion. (vis Merie Olmsted)

POLLY exhibits the late war markings of the 79th FS based at Kingscilffe during 1945. The nose stripes and spinner are Black and White. The lines on the wings are sighting bands for dive-bombing missions.







Captain K. B. Everson flew MARY BETH with the 504th Fighter Squadron at Fowlmere in April of 1945, acoring twelve victories. There is a streamlined mirror mount on top the sliding part of the canopy. (USAAF)

NANCY LEE flew with the 402d Fighter Squadron at Zwartberg, Belgium, as part of the 9th Air Force. The fancy scallop markings, canopy rail, and tail stripe are Dark Blue. (J. O'Rourke)

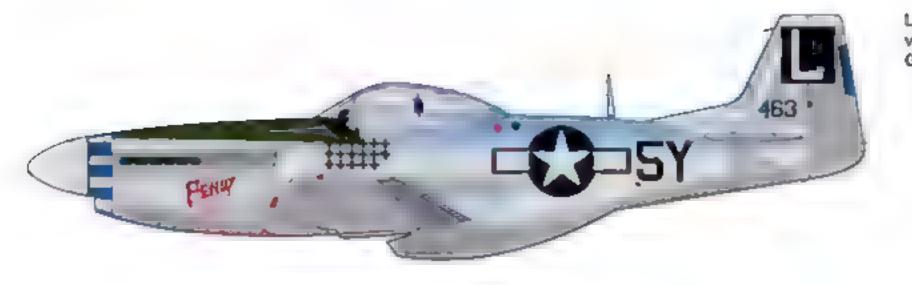




DANNY BOY 2nd, a 350th FS P-51D, came to grief on the lcy grass at Raydon on 29 December 1944, following an encounter with the remnants of Hitler's Luftwaffe that broke the landing gear. (USAAF)

Lieutenant H.P. Piunk flew *AMBROSIA* with the 479th FG based at Wattisham during 1945. By 1945, all remnants of the D-Day Black and White stripes had been removed. The tail checkerboard was Black and White.





Lieutenant Colonel John Lowell (seventeen and a half victories) was the Commander of the 364th Fighter Group during 1945, when he flew PENNY 4.

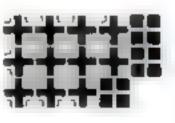
MARY BETH was the P-51D flown by Captain Kirk Everson with the 504th Fighter Squadron at Fowlmere, England during 1945.

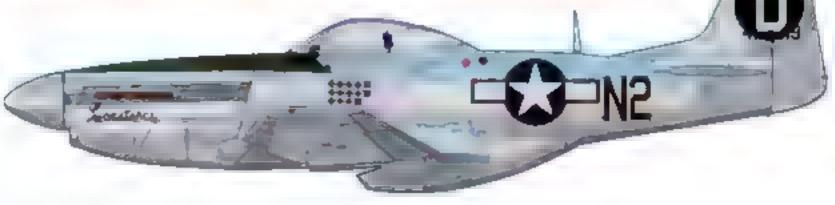


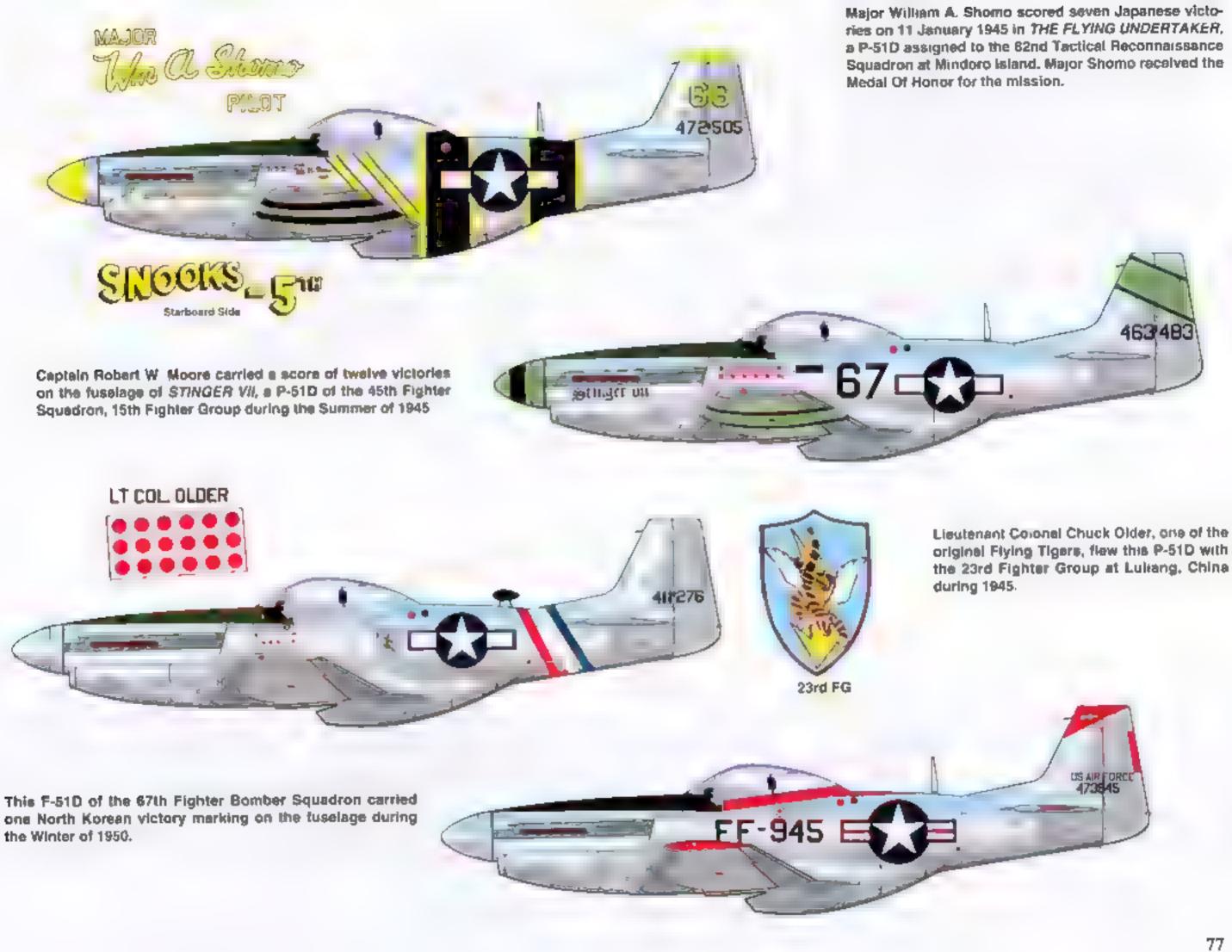


Lieutenant James McCubbin scored five victories in MARY AL, the P-51D he flew while with the 365th Fighter Squadron, 364th Fighter Group at Honington.

CONSTANCE was flown by Lieutenant Colonel George Ceuteers of the 383rd Fighter Squadron, 364th Fighter Group, who scored fourteen victories, including an Me-262 German jet lighter during 1945









FOOL'S PARADISE IV, an early P-51D assigned to the 380th FS, sits on the ramp at one of the forward air strips recently captured in France. The upper D-Day bands have been "removed"; the fuselage bands are over-painted in Olive Drab, while someone has attempted to remove the wing bands using rags soaked in gasoline for paint remover. (USAAF)

THE BENGAL LANCER, a 503rd FS P-51D, warms up for a mission in the snow at Fowlmere in February of 1945. The radiator door under the national insignis is in the fully open position. The nose is Red and White, while the rudder is Red. (USAAF)







As German airfields were captured enroute to Berlin, Allied squadrons began using them as soon as they were serviceable. This 355th FS P-51D undergoes major maintenance at the former Luftwaffe field near Ober Olm in April of 1945. U. S. mechanics have made quick use of the service platforms left behind by the former tenants. (USAAF)

In the CBI Theater good maintenance facilities were few and far between. These 311th FG P-51Ks alt in a "built for them" hanger at Heein, China during early 1945. (George McKay)



CLAMWINKLE McSLOP, a 78th FS P-51D heading back to Home Plate at South Field, Iwo Jima in 1945, following a fighter-bomber strike against targets on Oklnaws. The spinner, wingtips, and tall band are Yellow and Black. (via Jim Sullivan)



